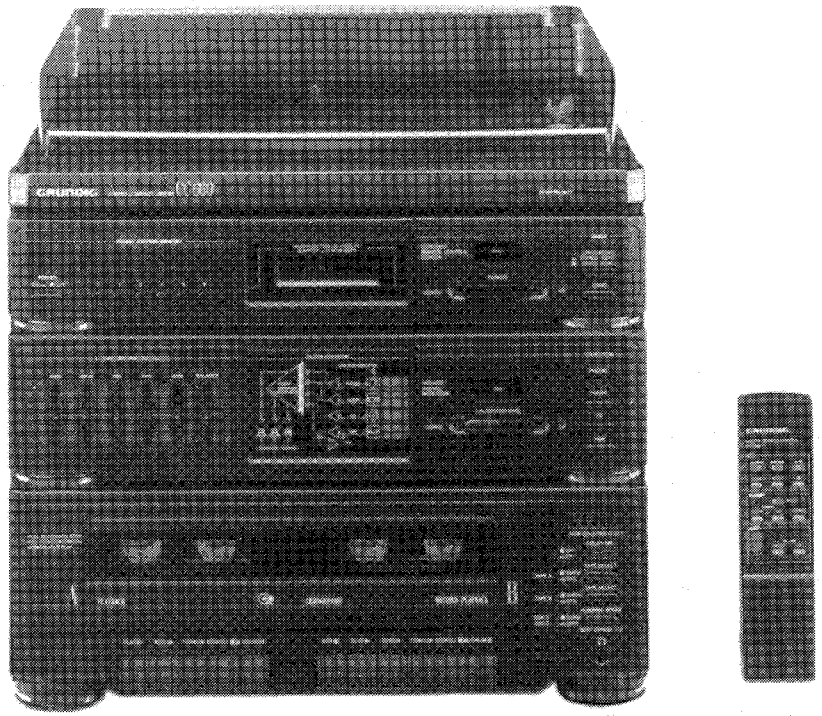
GRUNDIG SERVICE MANUAL

HIFI

Ⓓ Btx * 32700 #

CC 660

SACH-NR. / PART NO.: 75987-555.00 G.KA 50



Ⓓ

Bei Eingriffen Schutzmaßnahmen für MOS-Bauteile beachten!

Das Gerät muß auch nach der Reparatur den Sicherheitsbestimmungen nach DIN/IEC 65 VDE 0860 entsprechen.

Inhaltsverzeichnis **Seite**

Sicherheitsvorschriften	2-3
Ausbauhinweise	4-8
Ersatzteilliste	9-12
IR-Geber	13-14
Einstellungen am Plattenspieler	15-16
Abgleich	17-19
IC-Innenschaltbilder	20-22
Schaltbild	23-26
Druckplatten	27-30

Ⓖⓑ

N.B. When carrying out repairs, observe MOS precautions!

After the unit has been repaired, it should still meet the DIN/IEC 65 VDE 0860 safety requirements.

Contents **Page**

Safety requirements	2-3
Disassembly Instructions	4-8
Spare parts List	9-12
Remote Control	13-14
Adjustments at the turn table	15-16
Alignment	17-19
IC Block Diagram	20-22
Wiring Diagram	23-26
Printed Circuit Boards	27-30

Änderungen vorbehalten
Subject to alteration
Printed in Germany 0990

Service Manual CC 660 Sachnummer/Order No.:72010-717.70

Sicherheitsvorschriften / Safety requirements / Prescrizioni de sicurezza / Prescriptions de sécurité / Prescripciones de seguridad

(D) **Achtung:** Bei Eingriffen ins Gerät sind die Sicherheitsvorschriften nach VDE 701 (reparaturbezogen) bzw. VDE 0860 / IEC 65 (gerätebezogen) zu beachten!

Bauteile nach IEC- bzw. VDE-Richtlinien ! Im Ersatzfall nur Teile mit gleicher Spezifikation verwenden!

MOS - Vorschriften beim Umgang mit MOS - Bauteilen beachten!

(GB) **Attention:** Please observe the applicable safety requirements according to VDE 701 (concerning repairs) and VDE 0860 / IEC 65 (concerning type of product)!

Components to IEC or VDE guidelines! Only use components with the same specifications for replacement!

Observe **MOS** components handling instructions when servicing!

(I) **Attenzione:** Osservarne le corrispondenti prescrizioni di sicurezza VDE 701 (concernente servizio) e VDE 0860 / IEC 65 (concernente il tipo di prodotto)!

Componenti secondo le norme VDE risp. te IEC! In caso di sostituzione impiegare solo componenti con le stesse caratteristiche.

Osservare le relative prescrizioni durante, lavori con componenti **MOS**!

(F) **Attention:** Priere d'observer les prescriptions de securite VDE 701 (concernant les reparations) et VDE 0860 / IEC 65 (concernant le type de produit)!

Composants répondant aux normes VDE ou IEC. Les remplacer uniquement par des composants ayant les memes spécifications.

Lors de la manipulation des circuits **MOS**, respecter les pescriptions **MOS**!

(E) **Atención:** Recomendamos las normas de seguridad VDE u otras normas equivalentes, por ejemplo: VDE 701 para reparaciones, VDE 0860 / IEC 65 para aparatos!

Componentes que cumplen las normas VDE/IEC. En caso de sustitución, emplear componentes con idénticas especificaciones!

Durante la reparacion observar las normas sobre componentes **MOS**!

(USA) U.S.& Canada **Attention**: This set can only be operated from AC mains of 120 V/60 Hz. Also observe the information given on the rear of the set.

CAUTION-for continued protection against risk of fire replace only with same type fuses!

CAUTION: to reduce the risk of electric shock, do not remove cover (or back), no user-serviceable parts inside, refer servicing to qualified service personnel. Observe **MOS** components handling instructions when servicing!

(D)

Sicherheitsbestimmungen

Nach Servicearbeiten ist bei Geräten der Schutzklasse II die Messung des Isolationswiderstandes und des Ableitstromes bei eingeschaltetem Gerät nach **VDE 0701 / Teil 200** bzw. der am Aufstellort geltenden Vorschrift, durchzuführen!
Dieses Gerät entspricht der Schutzklasse II, erkennbar durch das Symbol ⧈ .

Wir empfehlen die Messungen mit dem **METRATESTER 3** durchzuführen. (Meßgerät zur Prüfung elektrischer Geräte nach VDE 0701).

Metrawatt GmbH
Geschäftsstelle Bayern
Triebstr. 44
D 8000 München 50

Ist die Sicherheit des Gerätes nicht gegeben, weil
- eine Instandsetzung unmöglich ist
- oder der Wunsch des Benützers besteht, die Instandsetzung nicht durchführen zu lassen,

so muß dem Betreiber die vom Gerät ausgehende Gefahr schriftlich mitgeteilt werden.

Empfehlungen für den Servicefall

- Nur Original - Ersatzteile verwenden.
  Bei Bauteilen oder Baugruppen mit der Sicherheitskennzeichnung ⚠ sind Original - Ersatzteile zwingend notwendig.
- Auf Sollwert der Sicherungen achten.
- Zur Sicherheit beitragende Teile des Gerätes dürfen weder beschädigt noch offensichtlich ungeeignet sein.
- Dies gilt besonders für Isolierungen und Isolierteile.
- Netzleitungen und Anschlußleitungen sind auf äußere Mängel vor dem Anschluß zu prüfen. Isolation prüfen!
- Die Funktionssicherheit der Zugentlastung und von Biegeschutz-Tüllen ist zu prüfen.
- Thermisch belastete Lötstellen absaugen und neu löten.
- Belüftungen frei lassen.

(GB)

Safety Standard Compliance

After service work on a product conforming to the Safety Class II, the insulating resistance and the leakage current with the product switch on must be checked according to VDE 0701 or to the specification valid at the installation location!
This product conforms to the Safety Class II, as identified by the symbol ⧈ .

We recommend that the measurements are carried out using the **METRATESTER 3**. (Test equipment for checking electrical products to VDE 0701).

Metrawatt GmbH
Geschäftsstelle Bayern
Triebstr. 44
D 8000 München 50

If the safety of the product is not proved, because
- a repair and restoration is impossible
- or the request of the user is that the restoration is not to be carried out,

the operator of the product must be warned of the danger by a written warning.

Recommendation for service repairs

- Use only original spare parts.
  With components or assemblies accompanied with the Safety Symbol ⚠ only original-spare parts are strictly to be used.
- Use only original fuse value.
- Safety compliance, parts of the product must not be visually damaged or unsuitable. This is valid especially for insulators and insulating parts.
- Mains leads and connecting leads should be checked for external damage before connection. Check the insulation!
- The functional safety of the tension relief and bending protection bushes are to be checked:
- Thermally loaded solder pads are to be suck off and re-soldered.
- Ensure that the ventilation slots are not obstructed.

(F)

Prescriptions de securite

Suite aux travaux de maintenance sur les appareils de la classe II, il convient de mesurer la résistance d'isolement et le courant de fuite sur l'appareil en état de marche, contormément á la norme VDE 0701 § 200, ou selon les prescriptions en vigueur sur le lieu de fonctionnement de l'appareil!

Cet appareil est conforme aux prescriptions de sécurité classe II, signaléé par le symbole ⧈ .

Pour ces mesures, nous préconisons l´utilisation du **METRATESTER 3** (instrument de mesure pour le contrôle d'appareils électriques conformes á la norme VDE 0701).

METRAWATTWATT GmbH
Geschäftsstelle Bayern
Triebstr. 44
D 8000 München 50

Dans le cas où la sécurité de l'appareil n´est pas assurée pour les aisons suivantes:

- la remise en état est impossible
- l'utilisateur ne souhaîte pas la remise en état de l'appareil.

l'utilisateur doit être informé par écrit du danger que représente lùtili sation de l'appareil.

Recommandations pour la maintenance

- Utiliser exclusivement des piéces de rechange d'origine. Les composants et ensembles de composants signalés par le symbole ⚠ doivent être impérativement remplacés par des pièces d'origine.
- Respecter la valeur nominale des fusibles.
- Veiller au bon état et la conformité des pièces contribuant à la sécurité de fonctionnement de l'appareil. Ceci s'applique particuliérement aux isolements et pièces isolantes.
- Véritier le bon état extérieur des câbles secteur et des câbles de raccordement au point de vue isolement avant la mise sous tènsion.
- Véritier le bon état des protections de gaine.
- Nettoyer les soudures avant de les renouveler.
- Dégager les voies d'aération.

(I)

Norme di sicurezza

Successivamente ai lavori di riparazione, negli apparecchi della classe di protezione II occorre effettuare la misura della resistenza di isolamento e della corrente di dispersione quando l'apparecchio e'acceso, secondo le norme VDE 0701 / parte 200 e rispettivamente le norme locali!

Questo apparecchio corrisponde alla classe di protezione II ed è riconoscibile dal simbolo ⧈ .

Si raccomanda di effettuare le misure con lo strumento **METRATESTER 3** (strumento di misura per il controllo di apparecchi elettrici secondo VDE 0701).

Metrawatt GmbH
Geschäftsstelle Bayern
Triebstr. 44
D 8000 München 50

Se la sicurezza dell'apparecchio non è raggiunta, perchè

- una riparazione non è possibile
- oppure è desiderio del cliente che una riparaz. non avvenga in questi casi si deve comunicare per iscritto all'utilizzat.

la pericolosità dell'apparecchio riguardo il suo isolamento.

Raccomandazione per il servizio assistenza

- Impiegare solo componenti originali:
  I componenti o i gruppi di componenti contraddistinti dall' indicaz. ⚠ devono assolutamente venir sostituiti con parti originale.
- Osservare il valore nominale dei fusibili.
- I componenti che concorrono alla sicurezza dell´apparecchio non possono essere nè danneggiati nè risultare visibilmente inadatti. Questo vale soprattutto per isolamenti e parti isolate.
- I cavi di rete e di collegamento vanno controllati prima dell'utilizzo affinchè non presentino imperfezioni esteriori. Controllare l'isola mento.
- E´necessario controllare la sicurezza dei fermacavi e delle guaine flessibili.
- Saldature caricate termicam. vanno rifatte.
- Lasciare libere le fessure di areazione.

(E)

DISPOSICIONES PARA LA SEGURIDAD

Después de operaciones de servicio en aparatos de la clase de proteccion II, se llevará a cabo la medida de la resistencia de aislamiento y de la corriente derivada, con el aparato conectado, de acuerdo con VDE 0701 o de las disposiciones vigentes en el lugar de instalación .

Este aparato corresponde a la clase de protección II, reconocible por el sìmbolo ⧈ .

Aconsejamos llevar a cabo las medidas con el **METRATESTER 3** (Instrumento de medida para la comprobación de aparatos eléctricos según VDE 0701).

METRAWATT GmbH
Geschäftsstelle Bayern
Triebstr. 44
D 8000 München 50

Si no se cumple la seguridad del aparato, porque

- la puesta en orden es imposible, o
- esiste el desco del usuario de no realizarla, se ha de comunicar a quien lo haga funcionar, por escrito, del peligro dimanante del aparato.

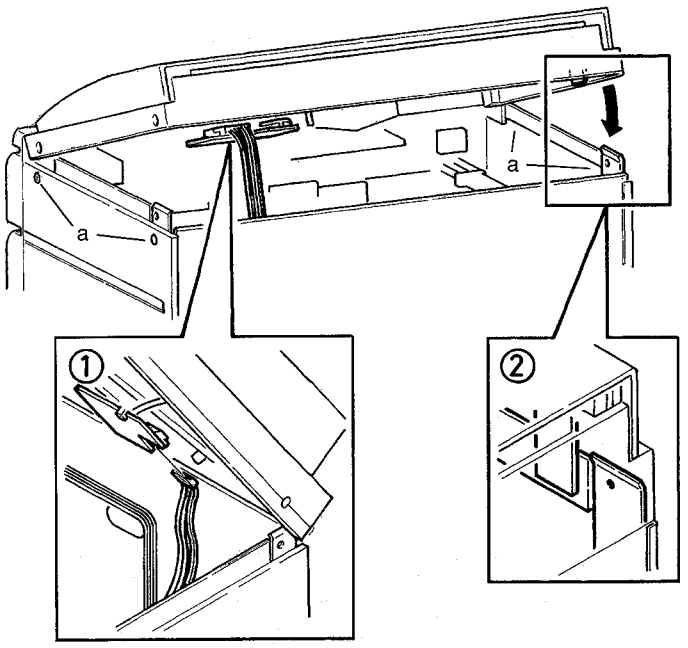
Recomendaciones para caso de servicio

- Emplear sólo componentes originales.
  Con componentes o grupos constructivos con el indicativo de se guridad ⚠ son de obligada necessidad piezas de repuesto originales.
- Las partes del aparato que contribuyan a la seguridad del mismo no deben estar deterioradas ni ser manifiestamente inadecuadas.
- Esto es especialmente válido para aislamientos o piezas aislantes.
- Los cables de red y de conexión se comprobarán, antes de concc tarlos, en cuanto a defectos externos. Comprobar el aislamiento.
- Se ha de comprobar la función de seguridad de la compensación de tiro o de los manguitos de protección contra doblamientos.
- Repasar los puntos de soldadura sometidos a carga térmica.
- Mantener libres los canales aireación.

Ausbauhinweise

Compact Center

Plattenspieler ausbauen
- 4 Schrauben **a** herausschrauben.
- Plattenspieler hinten anheben und Steckverbinder lösen.
- Plattenspieler abnehmen.
  Beim Einbau darauf achten, daß die Feder **41** in das Gelenk **24** eingreift.



Gehäuseseitenteile (8/9)
- Je 4 Schrauben **b** herausschrauben.
- Gehäuseseitenteile **(8/9)** abnehmen.

Abschirmblech
- 6 Schrauben **c** herausschrauben.
- Abschirmblech herausnehmen.

Deck Amp. Platte (101)
- 2 Schrauben **d** herausschrauben.
- Stöpsel **(10)** abziehen.
- Deck Amp. PBC **(101)** nach hinten abziehen.
- Steckverbinder lösen.
- Leitungen zur Input PCB **(103)** ablöten.

HF- + Bedien- +IR-Empfänger-Platte (109/107/111)
- Deck Amp. PBC **(101)** ausbauen.
- 14 Schrauben **e** herausschrauben.
- Leitungen ablöten.

Input-Platte (103)
- 2 Schrauben **f** herausschrauben.

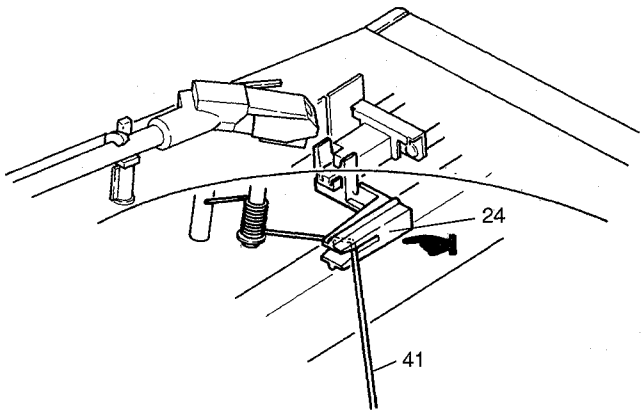
Main-Platte (102)
- 3 Schrauben **g** herausschrauben.
- 4 Schrauben **h** herausschrauben.
- Steckverbinder lösen.
- Leitungen ablöten.

Ant.-Platte (112)
- 2 Schrauben **i** herausschrauben.
- Leitungen ablöten.

Disassembly Instructions

Compact Center

Removing of the Player
- Unscrew 4 screws **a**.
- Lift the player on the reverse side and disconnect the plug-in connector.
- Remove the player.
  When reassembling take care that the spring **41** interferes with the joint **24**.



Removing of the sides (8/9) of the case
- Unscrew 4 screws **b** on each side.
- Remove the sides **(8/9)**.

Removing of the shielding
- Unscrew 6 screws **c**.
- Remove the shielding.

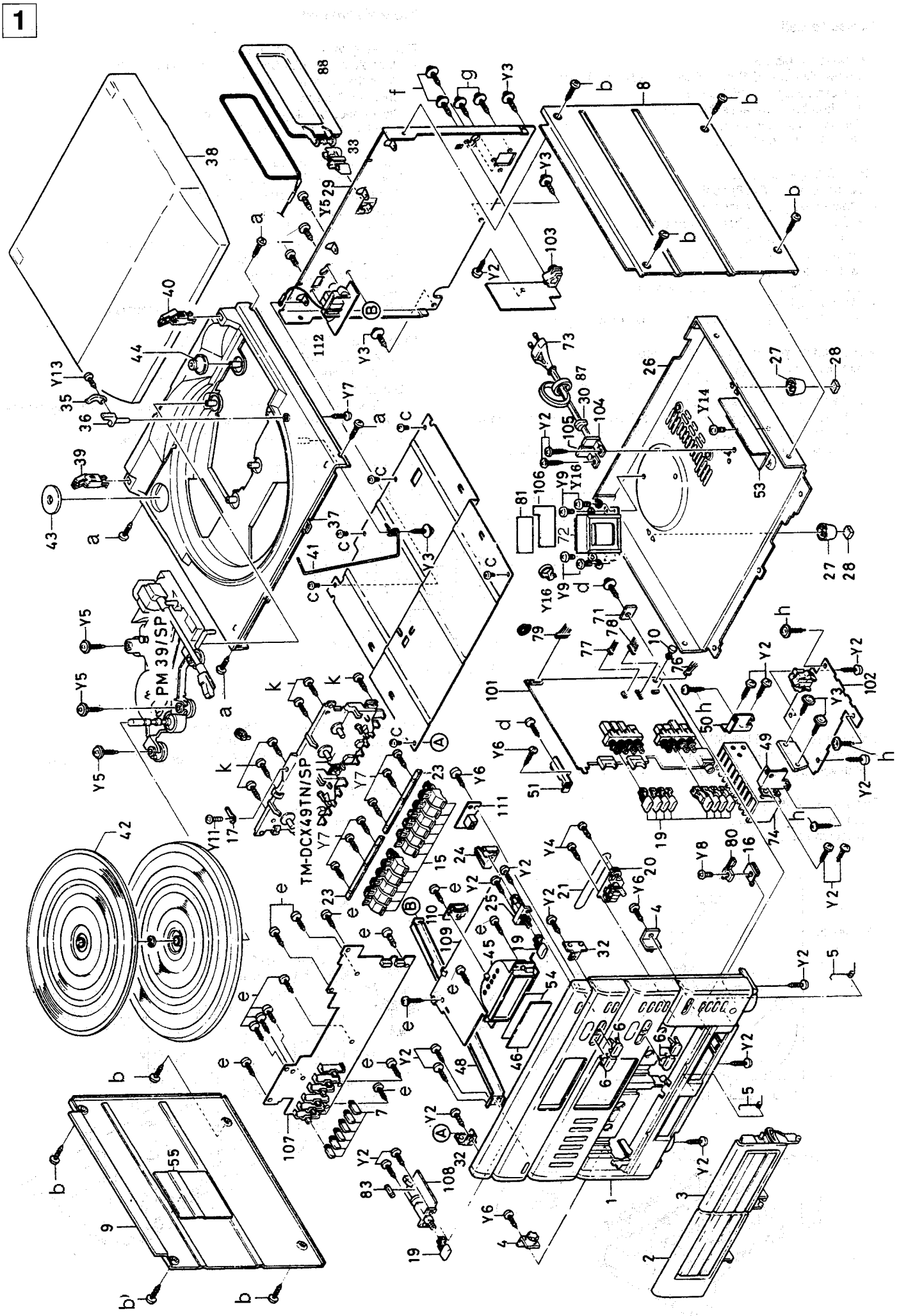
Deck Amp. PCB (101)
- Unscrew 2 screws **d**.
- Remove peg **10**.
- Remove Deck Amp. PCB **(101)** to the rear.
- Disconnect the plug-in connectors.
- Unsolder the leads to the Input PCB **(103)**.

RF+ Control+ IR PCB (109/107/111)
- Remove the Deck Amp.PCB **(101)**.
- Unscrew 14 screws **e**.
- Unsolder the leads.

Input PCB (103)
- Unscrew 2 screws **f**.

Main PCB (102)
- Unscrew 3 screws **g**.
- Unscrew 4 screws **h**.
- Disconnect the plug-in connectors.
- Unsolder the leads.

Ant. PCB (112)
- Unscrew 2 screws **i**.
- Unsolder the leads.


1
PM 39/SP
TM-DCX49TN/SP

Cassettenteil

Laufwerke ausbauen
- Zählwerkriemen **(21)** am Zählwerk **(20)** aushängen.
- Cassettenklappen **(2/3)** öffnen.
- 6 Schrauben **k** herausschrauben.
- Steckverbindungen lösen.
- Stop-Schalter **(80)** ablöten.

Motor (M70) ausbauen
- Antriebsriemen **(M28)** aushängen.
- Motorhalter **(M32)** ausbauen:
  6 Schrauben **(M82)** herausschrauben.
  4 Nasen **l** aushängen.
  Hebel **(M23)** unter Hebel **(M46)** hervorziehen.
  Motorhalter abnehmen.
- 3 Motorbundschrauben **(M31)** herausschrauben.
- Motor abnehmen.
- Beim Einbau zuerst Riemen Laufwerk B einhängen.

Aufwickelkupplung (M18;M65) ausbauen
Aufwickelkupplung **(M18)** Rücklauf
- Aufwickelkupplung mit Schraubendreher abhebeln.

Aufwickelkupplung **(M65)** Vorlauf
- In der Aussparung **m** des Hebels **M62** die Rastnase mit Schraubendreher ausrasten und Hebel **M62** abnehmen.
- Aufwickelkupplung **(M65)** mit Schraubendreher abhebeln.

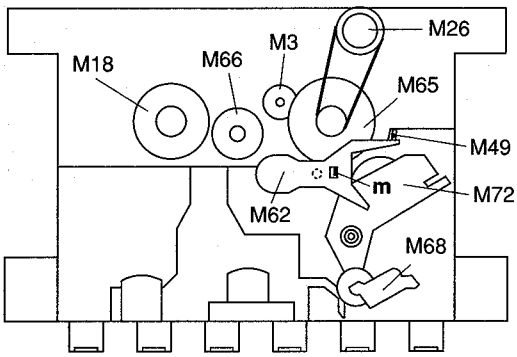
Tape Mechanism

Removing of the Mechanisms
- Unhook the counter belt **(21)** at the counter **(20)**.
- Open the cassette lids **(2/3)**.
- Unscrew 6 screws **k**.
- Disconnect the plug-in connectors.
- Unsolder the stop switch **(80)**.

Removing of the motor (M70)
- Unhook the driving belt **(M28)**.
- Disassemble the motor fixing device **(M32)**:
  Unscrew 6 screws **M82**.
  Unhook 4 catches **l**.
  Withdraw the lever **M23** which is located below lever **M46**.
  Take out the motor fixing device.
- Undo 3 motor collar screws **M31**.
- Remove the motor.
- When reassembling at first fit the belt mechanism B.

Removing of the tape reels (M18;M65)
Take-up reel **(M18)**
- Lift the reel by means of a screw driver.

Supply reel **(M65)**
- Disengage the catch in the cutout **m** of the lever **M62** by means of a screw driver and remove lever **M62**.
- Lift the reel **(M65)** by means of a screw driver.

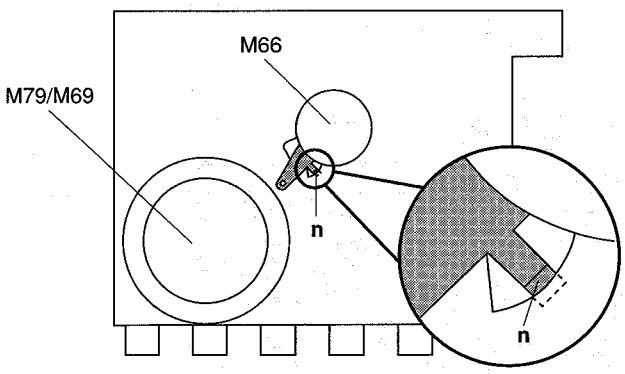


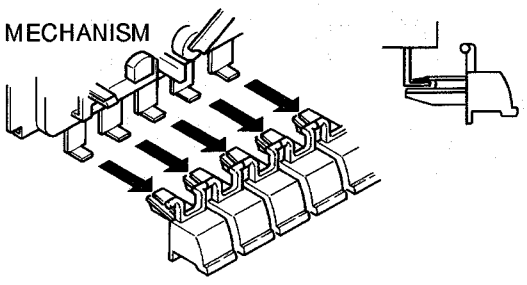
Schwungscheibe (M69,M79) ausbauen
- Ölfangscheibe **(M84)** abnehmen.
- Schwungscheibe **(M69,M79)** mit Tonwelle abziehen.

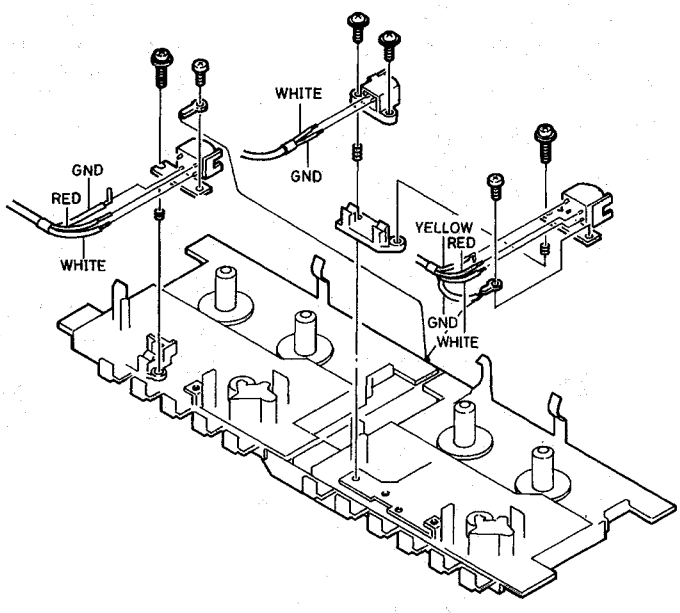
Zahnrad FF (M66)
- Rastnase **n** ausrasten.
- Kupplung abnehmen.

Removing of the flywheel (M69,M79)
- Remove the oil stop disc **(M84)**.
- Take out the flywheel **(M69,M79)** together with the capstan.

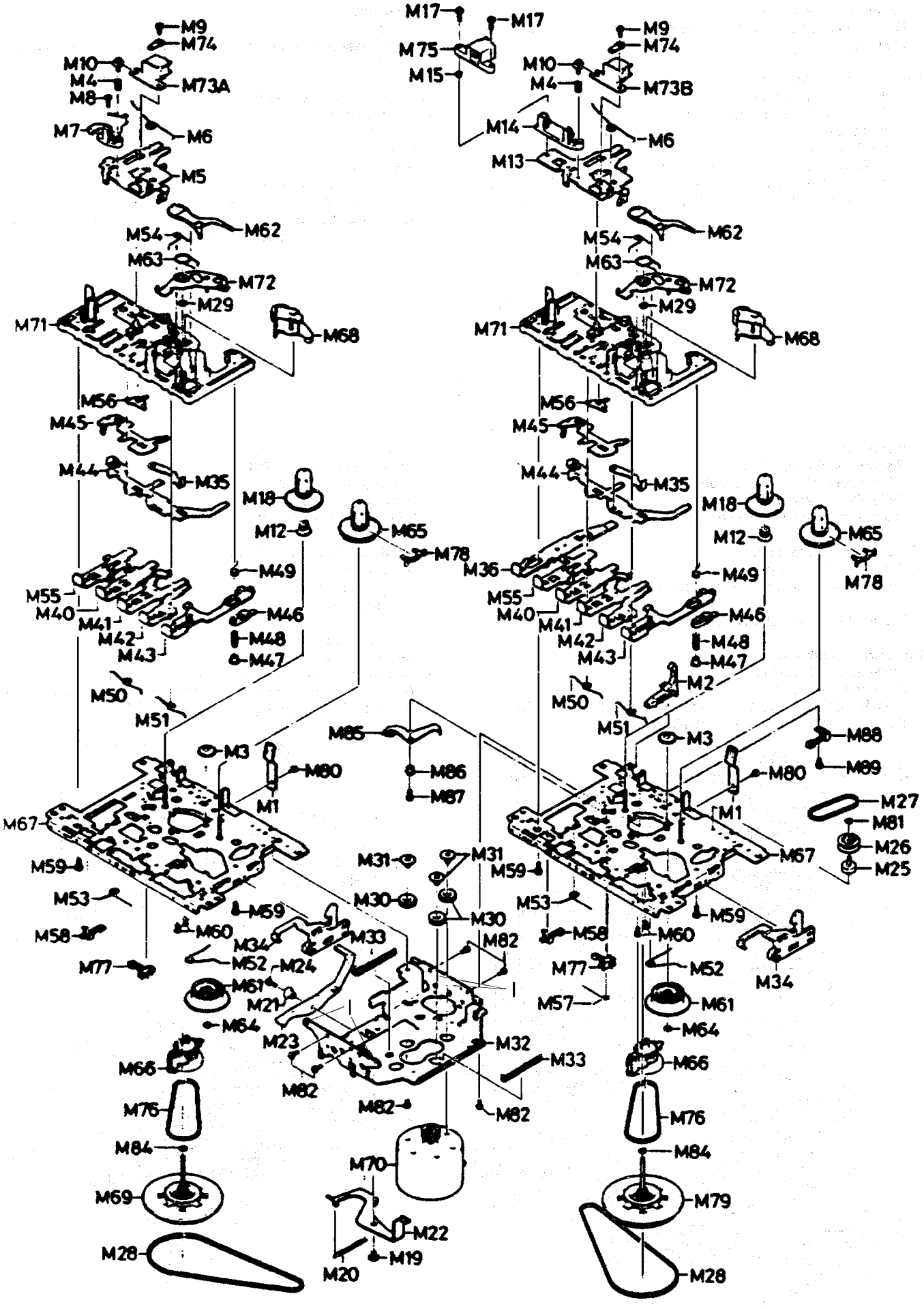
FF Gear (M66)
- Disengage the catch **n**.
- Remove the clutch.







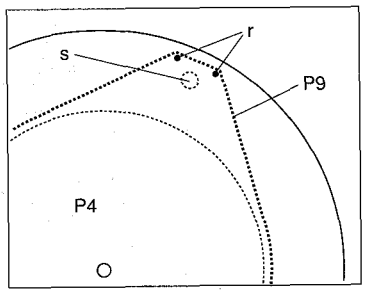
2


M9
M74
M10
M4
M8
M73A
M7
M6
M5
M54
M62
M63
M72
M29
M71
M68
M56
M45
M44
M35
M18
M12
M49
M55
M40
M41
M42
M43
M46
M48
M47
M50
M51
M3
M80
M1
M67
M59
M53
M58
M77
M60
M34
M24
M52
M61
M21
M64
M66
M76
M84
M69
M28
M17
M75
M15
M14
M13
M73B
M65
M78
M36
M2
M85
M86
M87
M31
M30
M33
M82
M23
M32
M70
M22
M19
M20
M88
M89
M27
M81
M26
M25
M57
M79

Plattenspieler

Plattenspieler ausbauen
- 4 Schrauben **a** herausschrauben.
- Plattenspieler hinten anheben und Steckverbinder lösen.
- Plattenspieler abnehmen.
  Beim Einbau darauf achten, daß die Feder **41** in das Gelenk **24** eingreift.

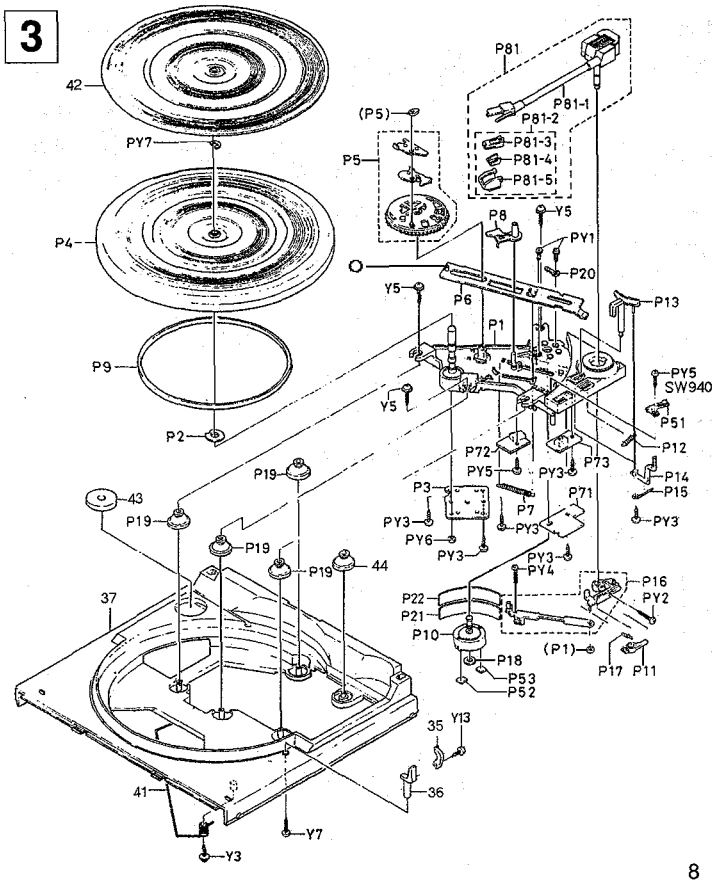
Plattenteller P4 abnehmen
- Plattenspieler abnehmen.
- Sicherungsscheibe **PY7** abnehmen.
- Antriebsriemen **P9** von der Unterseite des Plattentellers abnehmen.
- Plattenteller **P4** abnehmen.
  Beim Einbau den Antriebriemen **P9** auf den Plattenteller aufziehen und über die 2 Nasen **r** spannen. Plattenteller so in den Plattenspieler einsetzten, daß die Antriebsachse **s** in den Riemen eingreift.



Chassis ausbauen (P1)
- Plattenteller **P4** abnehmen.
- 3 Schrauben **Y5** herausschrauben.
- Feder **41** aushängen.
- Chassis nach oben herausnehmen.

Tonarm (P81) abnehmen
- Tonarmleitungen ablöten.
- Tonarmachse zusammendrücken und Hebel **P11** und **P16** aushängen.
- Tonarm **(P81)** nach oben abziehen.

Zahnrad P5 ausbauen
- Plattenteller **P4** abnehmen.
- Zahnrad **P5** an der Achse ausrasten.
  Beim Einbau darauf achten, daß der Führungsstift **o** des Schiebers **P6** in die Führung im Zahnrad **P5** eingreift.



Player

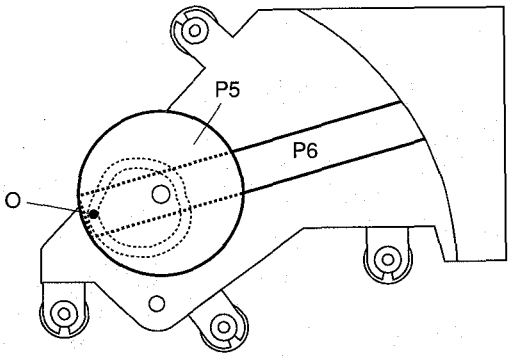
Removing of the Player
- Unscrew 4 screws **a**.
- Lift the player on the reverse side and disconnect the plug-in connector.
- Remove the player.
  When reassembling take care that the spring **41** interferes with the joint **24**.

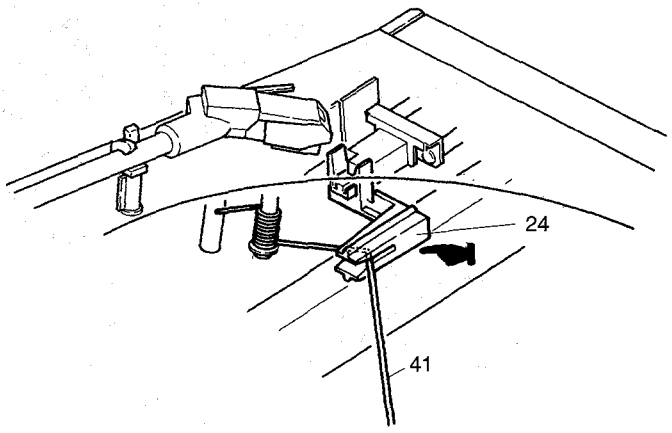
Removing of the turn table (P4)
- Remove the player.
- Remove the retainer washer **PY7**.
- Remove the drive belt **P9** from the turn table through the bottom side of the player.
- Remove the turn table **P4**.
  When reassembling wind the drive belt **P9** up to the turntable and stretch it above the noses **r**. Put the turn table into the player so that the drive shaft **s** engages with the drive belt **P9**.

Removing of the chassis (P1)
- Remove the turn table **(P4)**.
- Unscrew 3 screws **Y5**.
- Unhook the spring **41**.
- Remove the chassis to the top.

Removing of the tone arm (P81)
- Unsolder the tone arm leads.
- Compress the tone arm axle and unhook the levers **P11** and **P16**.
- Pull up the tone arm **(P81)**.

Removing of the gear P5
- Remove the turn table **(P4)**.
- Disengage the gear **P5** at the axle.
  When reassembling take care that the guide pin **o** of the slider **P6** engages with the guide groove of the gear **P5**.





GRUNDIG Ersatzteilliste / List of spare parts

HIFI

Ⓓ Btx ★ 32700 #

CC 660

SACH-NR. / PART NO.: 75987-555.00 G.KA 50

POS. NR. POS. NO.	ABB. NR. FIG. NO.	SACHNUMMER PART NUMBER	ANZ. QUA.	BEZEICHNUNG (D)	DESCRIPTION (GB)
1	1	75987-555.01		GEHAEUSE-VORDERTEIL	CABINET FRONT
2	1	75987-555.02		KASSETTENDECKEL A KPL.	CASSETTE LID ASSY A
3	1	75987-555.03		KASSETTENDECKEL B KPL.	CASSETTE LID ASSY B
4	1	75987-456.09		DAEMPFUNGSRAD	DAMPING WHEEL
5	1	75987-555.05		FEDER	SPRING
6	1	75987-555.06		TASTE, UP-DOWN	BUTTON / UP. DOWN
7	1	75987-555.07		SCHIEBETASTEN	SLIDER BUTTON
15	1	75987-555.09		TASTE, LAUFWERK	BUTTON MECH.
19	1	75987-555.10		TASTE, POWER/FUNKTION	BUTTON
20	1	75987-555.11		ZAEHLWERK	COUNTER
21	1	75987-555.12		ZAEHLWERKRIEMEN	COUNTER BELT
24	1	75987-555.13		GELENK	JOINT
25	1	75987-555.14		STOP-TASTER	SWITCH
27	1	75987-554.15		FUSS KPL.	FOOT ASSY
33	1	75987-374.16		HALTER F. RAHMENANTENNE	BRACKET
35	1	75987-555.18		TONARM-MOUVING	REST
36	1	75987-555.19		TONARM-FIXING	REST
38	1	75987-555.30		ABDECKHAUBE	DUST COVER
39	1	75987-417.30		SCHARNIER LINKS	HINGE
40	1	75987-417.31		SCHARNIER RECHTS	HINGE
41	1	75987-555.25		FEDER	SPRING
42	1	75987-555.26		TELLERAUFLAGE	PLATTER MAT
43	1	75987-555.27		ZENTRIERSTUECK	CENTRING PIECE
45	1	75987-555.28		REFLECTOR, LCD	REFLECTOR/LCD
46	1	75987-555.29		FENSTER, LCD	WINDOW/LCD
54	1	75987-555.35		FILTERSCHEIBE	SHEET/LCD
72	1	75987-555.36	⚠	TRAFO	TRANSFORMER
80	1	75987-522.72		SCHALTER / STOP	SWITCH
88	1	75987-555.38		ANTENNE	ANTENNA (USA); AERIAL (GB
101.1	1	75987-555.81		DRUCKSCHALTER, FUNKTION	SWITCH/PUSH/FUNCTION
101.2	1	75987-555.82		DRUCKSCHALTER,TAPE SELECT	SWITCH/PUSH/TAPE SELECT
101.3	1	75987-485.55		KOPFHOERBUCHSE	SOCKET HP
103.1	1	75987-555.40		BUCHSE, PHONO	SOCKET/PHONO
103.2	1	75987-456.66		BUCHSE/LINE-IN	SOCKET/ CD RCA
107	1	75987-555.39		SCHALTER / DOWN/S401-410/957/958	SWITCH
108	1	75987-555.34	⚠	NETZSCHALTER	POWER SWITCH
109	1	75987-555.33		DISPLAY	DISPLAYPLATTE
109.1		75987-555.47	⚠	LITHIUM BATTERIE	LITHIUM BATTERY
110.2		75987-555.44		LAMPE / PL 401	LAMP
111.1		75987-555.45		IR EMPFAENGER / S 411	INFRA RED
199		75987-554.83		BATTERIEDECKEL	BATTERY LID
200		75987-554.80		FERNBEDIENUNG RB 49	REMOTE CONTROL
				C LAUFWERK	C DRIVE MECHANISM
M2	2	75987-467.84		AUFNAHMESPERRE	RECORD LOCK
M3	2	75987-467.80		ZAHNRAD	GEAR WHEEL
M4	2	75987-413.51		DRUCKFEDER	PRESSURE SPRING
M6	2	75987-486.31		SCHENKELFEDER	LEG SPRING
M8	2	75987-516.12		SCHRAUBE M2X6	SCREW
M9	2	75986-627.03		SCHRAUBE	SCREW
M10	2	75987-413.58		JUSTIERSCHRAUBE	ADJUSTING SCREW
M12	2	75987-467.85		DRUCKFEDER	PRESSURE SPRING
M15	2	75987-414.99		DRUCKFEDER	PRESSURE SPRING
M17	2	75987-467.95		SCHRAUBE	SCREW

ÄNDERUNGEN VORBEHALTEN ALTERNATIONS RESERVED

POS. NR. POS. NO.	ABB. NR. FIG. NO.	SACHNUMMER PART NUMBER	ANZ. QUA.	BEZEICHNUNG (D)	DESCRIPTION (GB)
M18	2	75987-486.32		WICKELTELLER-RUECKLAUF	SPOOL CARRIER-REWIND
M20	2	75987-436.43		ZUGFEDER	SPRING
M21	2	75986-627.02		HEBEL	LEVER
M23	2	75986-627.01		HEBEL	LEVER
M27	2	75987-555.56		VIERKANTRIEMEN	SQUARE BELT
M28	2	75987-522.18		VIERKANTRIEMEN	SQUARE BELT
M30	2	75987-467.86		MOTORDAEMPFUNG	MOTOR DAMPING
M31	2	75987-467.87		SCHRAUBE	SCREW
M34	2	75987-516.04		AUSWURFHEBEL	EJECT LEVER
M46	2	75986-626.91		HEBEL	LEVER
M48	2	75986-626.92		FEDER	SPRING
M49	2	75987-486.21		SCHENKELFEDER	LEG SPRING
M50	2	75987-486.22		SCHENKELFEDER	LEG SPRING
M51	2	75987-486.26		SCHENKELFEDER	LEG SPRING
M52	2	75987-486.23		SCHENKELFEDER	LEG SPRING
M53	2	75987-486.24		SCHENKELFEDER	LEG SPRING
M54	2	75987-486.27		SCHENKELFEDER	LEG SPRING
M56	2	75987-555.57		FUEHLER	SENSOR
M57	2	75987-486.25		SCHENKELFEDER	LEG SPRING
M58	2	75987-414.97		SCHALTER / POWER	SWITCH
M61	2	5986-626.93		ZAHNRAD	GEAR WHEEL
M62	2	75987-516.10		HEBEL	LEVER
M63	2	75987-486.30		DREHFEDER	TORSION SPRING
M65	2	75987-485.72		WICKELTELLER	SPOOL CARRIER
M66	2	75987-485.73		VORLAUF/RUECKLAUFKUPPLUNG	CLUTCH
M68	2	75987-485.71		AR-HEBEL	AR-LEVER
M69	2	75987-486.29		SCHWUNGRAD	FLYWHELL
M70	2	75987-555.54		MOTOR KPL.	MOTOR
M73.1	2	75987-555.51		WIEDERGABEKOPF	HEAD PLAY
M73.2	2	75987-555.52		A/W-KOPF	R/P-HEAD
M75	2	75987-555.53		LOESCHKOPF	ERASE HEAD
M76	2	75986-486.34		RIEMEN/KUPPLUNG	DRIVE BELT
M77	2	75987-485.75		SCHALTER / PLAY.	SWITCH
M78	2	75987-486.33		FUEHLER	SENSOR
M79	2	75987-486.28		SCHWUNGRAD	FLYWHELL
M84	2	75987-413.59		SCHEIBE	WASHER
M88	2	75987-485.76		SCHALTER / REC.	SWITCH
				PLATTENSPIELER	RECORD PLAYER
P01	3	75987-555.61		CHASSIS	CHASSIS
P04	3	75987-555.62		PLATTENTELLER	TURNTABLE
P05	3	75987-555.63		ANTRIEBSRAD	DRIVE WHEEL
P06	3	75987-555.64		SCHIEBEHEBEL KPL.	SLIDING LEVER
P07	3	75987-555.65		FEDER	SPRING
P08	3	75987-555.66		HEBEL	LEVER
P09	3	75987-417.36		PORFILRIEMEN	FLAT BELT
P10	3	75987-555.67		MOTOR	MOTOR
P11	3	75987-555.68		HEBEL	LEVER
P12	3	75987-555.69		FEDER	SPRING
P13	3	75987-555.70		TONARMLIFT	LIFTER ARM
P14	3	75987-555.71		LIFTHEBEL	LIFT LEVER
P15	3	75987-555.72		FEDER	SPRING
P16	3	75987-555.73		HEBEL KPL.	LEVER
P17	3	75987-555.74		ZUGFEDER	TENSION SPRING
P19	3	75987-555.75		LAGERGUMMI	RUBBER BEARING
P51	3	75987-373.22		FEDERSCHALTER	SWITCH, PLAY
P72	3	75987-555.76		SCHALTER,EIN/AUS / SW 941	SWITCH
P73	3	75987-555.77		SCHALTER 33/45 / SW 942	SWITCH
P81.1	3	75987-555.78		ARM KPL.	ARM ASSY
P81.3	3	75987-555.79		SYSTEM	CARTRIDGE
P81.4	3	75987-555.80		NADEL	STYLUS
		72010-716.30		BEDIENUNGSANLEITUNG	INSTRUCTION MANUAL
		72010-717.70		SERVICE MANUAL	SERVICE MANUAL

ÄNDERUNGEN VORBEHALTEN ALTERNATIONS RESERVED

POS. NR. / POS. NO.	SACHNUMMER / PART NUMBER	BEZEICHNUNG (D) / DESCRIPTION (GB)
C 410	75987-555.22	CAPACITOR 0,047 FZ 5,5V
C 979	75987-555.91	ELKO 1000UF 6,3 V
C 999	75986-200.87	KONDENSATOR 0,01 UF 400V
CT 101	75987-555.48	TRIMMER
CT 151	75987-390.69	TRIMMER
CT 152	75987-390.69	TRIMMER
CT 153	75987-374.21	TRIMMER
CT 154	75987-374.21	TRIMMER
D 1	75986-328.02	DIODE GMA 01 / D1-5
D 6	75987-361.38	DIODE DS 442 / D6-9
D 10	75986-328.02	DIODE GMA 01/ D 10-16
D 101	75987-479.69	DIODE SVC 211 SP
D 102	75987-479.69	DIODE SVC 211 SP
D 103	75987-479.69	DIODE SVC 211 SP
D 104	75987-428.78	DIODE 1 SS 176
D 151	8309-217-321	DIODE SVC 321 SP-A/B/C/D
D 152	8309-217-321	DIODE SVC 321 SP-A/B/C/D
D 201	75987-361.38	DIODE DS 442
D 301	75987-361.38	DIODE DS 442
D 302	75987-361.38	DIODE DS 442
D 351	75987-361.38	DIODE DS 442
D 352	75986-651.51	DIODE MTZ 9,1 B-T 77
D 401	75987-361.38	DIODE DS 442 / D 401-403
D 405	75987-361.38	DIODE DS 442
D 406	75987-361.38	DIODE DS 442
D 408	75987-361.38	DIODE DS 442
D 409	75987-361.38	DIODE DS 442
D 410	75987-361.38	DIODE DS 442
D 411	75987-361.38	DIODE DS 442
D 420	75987-361.38	DIODE DS 442
D 501	75986-328.02	DIODE GMA 01
D 502	75986-328.02	DIODE GMA 01
D 601	75986-328.02	DIODE GMA 01
D 602	75986-328.02	DIODE GMA 01
D 940	75987-361.38	DIODE DS 442
D 953 ⚠	75986-200.82	DIODE DSF 10 C/D 953-960
D 961	75986-328.02	DIODE GMA 01
D 962	75986-328.02	DIODE GMA 01
D 963	75984-074.00	DIODE 1 S 2473
D 964	75986-328.02	DIODE GMA 01
D 965	75987-555.90	LE DIODE SLR 56 VC70F130-/ D 965-969
D 972	75986-328.02	DIODE GMA 01
F 701	75987-439.40	SICHERUNG 250V 1.6A
F 801	75987-439.40	SICHERUNG 250V 1.6A
F 901	75987-378.15	SICHERUNG 250V 0,4 A
IC 1	75986-317.02	IC LC 4069 UB 14 MOS
IC 201	75987-418.17	IC LA 1265
IC 301	8305-260-331	IC LA 3361 SANYO
IC 401	75987-555.17	IC TC 9306 F-045 BS MOS
IC 402	75987-555.24	IC TC 9172 AP MOS
IC 501	75987-487.29	IC LA 3246
IC 502	75987-555.41	IC UPC 1330 HA
IC 521	75987-206.11	IC LA 3220
IC 551	8305-258-101	IC CXA 1101 P SONY

ÄNDERUNGEN VORBEHALTEN

POS. NR. / POS. NO.	SACHNUMMER / PART NUMBER	BEZEICHNUNG (D) / DESCRIPTION (GB)
IC 701	75987-360.63	IC LA 3160
IC 940	8305-274-470	IC UPC 1470 H NEC
IC 951	75987-555.43	IC AN 7812 F
IC 952	75987-555.43	IC AN 7812 F
IC 953	75987-555.42	IC STK 4112 MK 2
IC 954	75986-626.34	IC TC 9153 AP MOS
L 101	75987-522.27	SPULE
L 102	75987-555.94	SPULE
L 103	75987-555.95	FILTER
L 104	75987-418.26	SPULE
L 105	75987-555.96	SPULE
L 131	75987-555.46	FILTER
L 132	75987-555.46	FILTER
L 151	75987-555.97	OSZILLATOR
L 152	75987-555.98	ANT.SPULE
L 153	75987-439.23	SPULE
L 154	75987-555.99	ANT. SPULE
L 155	75987-418.35	SPULE
L 501	75987-555.83	SPULE 85 KOHZ
L 502	75987-555.84	SPULE
L 511	75987-555.85	SPULE
L 512	75987-361.64	SPULE
L 601	75987-555.83	SPULE 85 KOHZ
L 602	75987-555.84	SPULE
L 611	75987-555.85	SPULE
L 612	75987-361.64	SPULE
L 931	75987-555.86	OSZILLATOR
L 951	75987-555.89	FILTER
L 952	75987-555.89	FILTER
Q 1	75987-435.89	TRANS.KTA 1015 GR
Q 2	75987-435.89	TRANS.KTA 1015 GR
Q 3	75987-300.72	TRANS.2 SC 1815 GR
Q 4	75987-435.89	TRANS.KTA 1015 GR
Q 101	75987-555.23	TRANS.2 SK 606 Q
Q 102	75987-465.47	TRANS.2 SC 1923 Y Q 102-104
Q 105	75987-555.23	TRANS.2 SK 606 Q
Q 151	75987-509.08	TRANS.2 SC 2878 (A) Q151-155
Q 156	75987-522.20	TRANS.2 SK 301 R
Q 157	75987-485.14	TRANS.2 SC 1740 S-S
Q 158	75987-485.14	TRANS.2 SC 1740 S-S
Q 201	75987-390.86	TRANS.2 SC 380 TM 02
Q 202	75987-485.14	TRANS.2 SC 1740 S-S
Q 301	75987-300.72	TRANS.2 SC 1815 GR
Q 302	75987-300.72	TRANS.2 SC 1815 GR
Q 303	75987-509.08	TRANS.2 SC 2878 (A)
Q 304	75987-509.08	TRANS.2 SC 2878 (A)
Q 351	75987-435.89	TRANS.KTA 1015 GR
Q 352	75987-485.14	TRANS.2 SC 1740 S-S
Q 354	75987-485.14	TRANS.2 SC 1740 S-S
Q 355	75987-435.89	TRANS.KTA 1015 GR
Q 356	75987-435.89	TRANS.KTA 1015 GR
Q 357	75987-485.14	TRANS.2 SC 1740 S-S
Q 358	75987-435.89	TRANS.KTA 1015 GR
Q 359	75987-485.14	TRANS.2 SC 1740 S-S
Q 360	75987-435.89	TRANS.KTA 1015 GR
Q 370	75987-435.89	TRANS.KTA 1015 GR
Q 401	75987-485.14	TRANS.2 SC 1740 S-S
Q 402	75987-414.52	TRANS.2 SC 2634 S
Q 403	75987-414.52	TRANS.2 SC 2634 S
Q 404	75987-485.14	TRANS.2 SC 1740 S-S
Q 501	75987-300.72	TRANS.2 SC 1815 GR Q501-508
Q 510	75987-300.72	TRANS.2 SC 1815 GR

ALTERNATIONS RESERVED

POS. NR. / POS. NO.	SACHNUMMER / PART NUMBER	BEZEICHNUNG (D) / DESCRIPTION (GB)
Q 601	75987-300.72	TRANS.2 SC 1815 GR
Q 602	75987-300.72	TRANS.2 SC 1815 GR Q602-608
Q 702	75987-300.72	TRANS.2 SC 1815 GR
Q 703	75987-300.72	TRANS.2 SC 1815 GR
Q 704	75987-300.72	TRANS.2 SC 1815 GR
Q 802	75987-300.72	TRANS.2 SC 1815 GR
Q 803	75987-300.72	TRANS.2 SC 1815 GR
Q 804	75987-300.72	TRANS.2 SC 1815 GR
Q 931	75987-300.72	TRANS.2 SC 1815 GR
Q 932	75987-300.72	TRANS.2 SC 1815 GR
Q 933	75987-300.72	TRANS.2 SC 1815 GR
Q 950	75987-300.72	TRANS.2 SC 1815 GR
Q 951	75987-300.72	TRANS.2 SC 1815 GR
Q 955	75987-300.72	TRANS.2 SC 1815 GR
Q 956	75987-300.72	TRANS.2 SC 1815 GR
Q 957	75987-300.72	TRANS.2 SC 1815 GR
R 950 ⚠	75987-555.88	WIDERSTAND 0,47 OHM 1/2 W
R 960 ⚠	75987-555.87	SI.-WIDERST.100 OHM 1/4 W
R 963 ⚠	75987-555.87	SI.-WIDERST.100 OHM 1/4 W
SVR 1	8792-002-140	ESTR.S6 2,2 KOHM LIN
SVR 201	8792-002-154	ESTR.S6 22 KOHM LIN
SVR 202	8792-002-151	ESTR.S6 10 KOHM LIN
SVR 301	8792-002-135	ESTR.S6 1 KOHM LIN
SVR 302	8792-002-151	ESTR.S6 10 KOHM LIN
SVR 501	8792-002-151	ESTR.S6 10 KOHM LIN
SVR 502	8792-002-151	ESTR.S6 10 KOHM LIN
SVR 503	8792-002-151	ESTR.S6 10 KOHM LIN
SVR 504	8792-002-164	ESTR.S6 100 KOHM LIN
SVR 601	8792-002-151	ESTR.S6 10 KOHM LIN
SVR 602	8792-002-151	ESTR.S6 10 KOHM LIN
SVR 603	8792-002-151	ESTR.S6 10 KOHM LIN
SVR 604	8792-002-164	ESTR.S6 100 KOHM LIN
SVR 940	8790-047-143	ESTR.SK10 3,3 KOHM
T 101	75987-555.92	FILTER
T 201	75987-418.29	FILTER
T 202	75987-418.30	FILTER
T 204	75987-555.93	SPULE
T 301	75987-390.81	SPULE
T 302	75987-390.81	SPULE
VR 751	75987-555.37	ESTR. /EQUALIZER VR 751-755
VR 756	75987-522.45	ESTR. /BALANCE
X 201	75987-555.21	FILTER X 201-203
X 204	75987-439.53	FILTER
X 205	75987-555.20	FILTER
X 401	75987-439.62	FILTER

ÄNDERUNGEN VORBEHALTEN

Sicherheitsvorschriften/Safety requirements / Prescrizioni de sicurezza / Prescriptions de sécurité / Prescripciones de seguridad

(D)

Achtung: Bei Eingriffen ins Gerät sind die Sicherheitsvorschriften nach VDE 701 (reparaturbezogen) bzw. VDE 0860 / IEC 65 (gerätebezogen) zu beachten!

Bauteile nach IEC- bzw. VDE-Richtlinien ! Im Ersatzfall nur Teile mit gleicher Spezifikation verwenden!

MOS - Vorschriften beim Umgang mit MOS - Bauteilen beachten!

(GB)

Attention: Please observe the applicable safety requirements according to VDE 701 (concerning repairs) and VDE 0860 / IEC 65 (concerning type of product)!

Components to IEC or VDE guidelines! Only use components with the same specifications for replacement!

Observe **MOS** components handling instructions when servicing!

(I)

Attenzione: Osservarne le corrispondenti prescrizioni di sicurezza VDE 701 (concernente servizio) e VDE 0860 / IEC 65 (concernente il tipo di prodotto)!

Componenti secondo le norme VDE risp. te IEC! In caso di sostituzione impiegare solo componenti con le stesse caratteristiche.

Osservare le relative prescrizioni durante, lavori con componenti **MOS**!

(F)

Attention: Priere d'observer les prescriptions de sécurité VDE 701 (concernant les reparations) et VDE 0860 / IEC 65 (concernant le type de produit)!

Composants répondant aux normes VDE ou IEC. Les remplacer uniquement par des composants ayant les mêmes spécifications.

Lors de la manipulation des circuits **MOS**, respecter les pescriptions **MOS**!

(E)

Atención: Recomendamos las normas de seguridad VDE u otras normas equivalentes, por ejemplo: VDE 701 para reparaciones, VDE 0860 / IEC 65 para aparatos!

Componentes que cumplen las normas VDE/IEC. En caso de sustitución, emplear componentes con idénticas especificaciones!

Durante la reparacion observar las normas sobre componentes **MOS**!

(USA)

U.S. & Canada

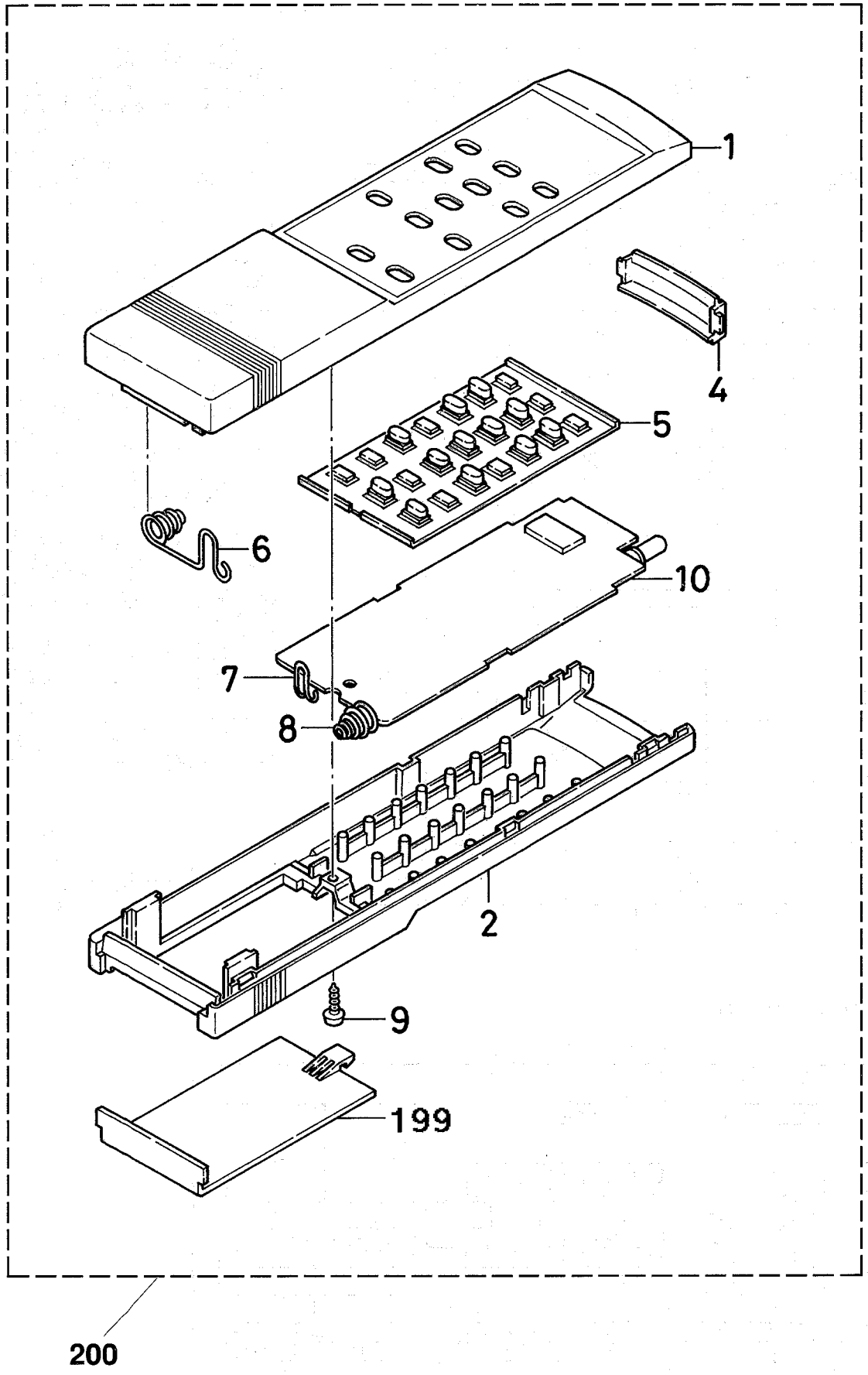
Attention: This set can only be operated from AC mains of 120 V/60 Hz. Also observe the information given on the rear of the set.
CAUTION: For continued protection against risk of fire replace only with same type fuses!
CAUTION: To reduce the risk of electric shock, do not remove cover (or back), no user-serviceable parts inside, refer servicing to qualified service personnel.

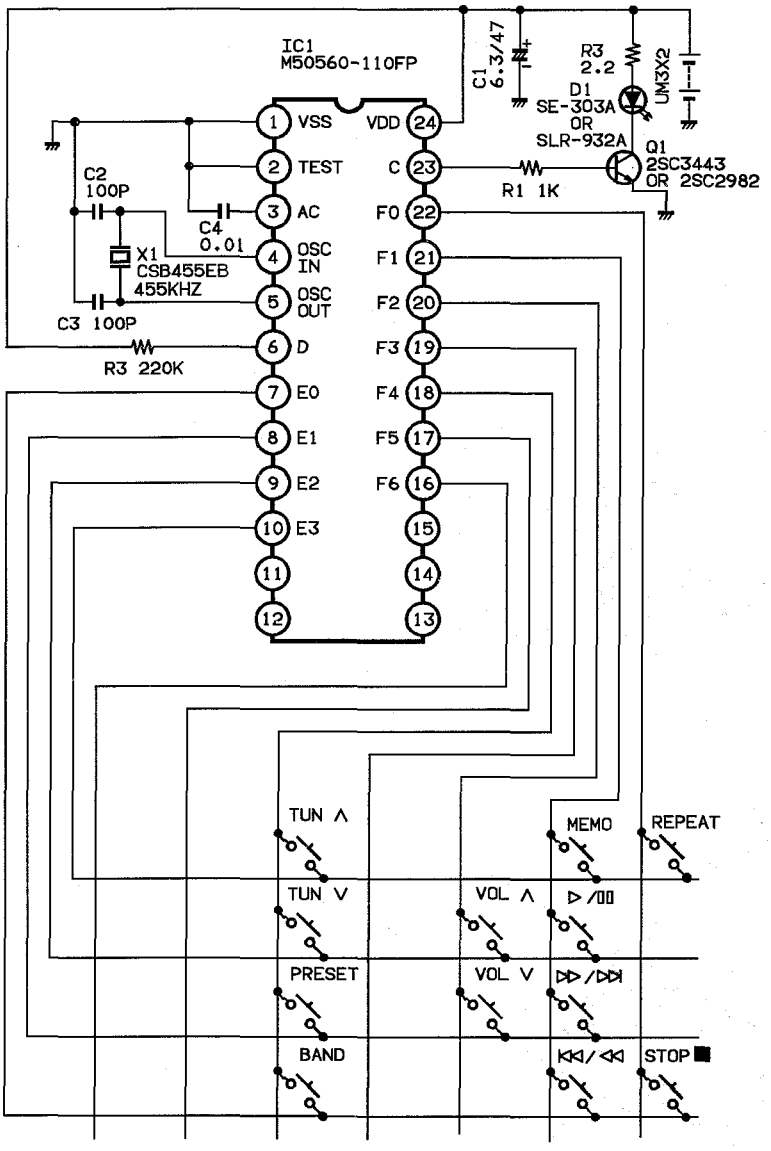
Components to safety guidelines (IEC/U.L.)! Only use components with the same specifications for replacement!

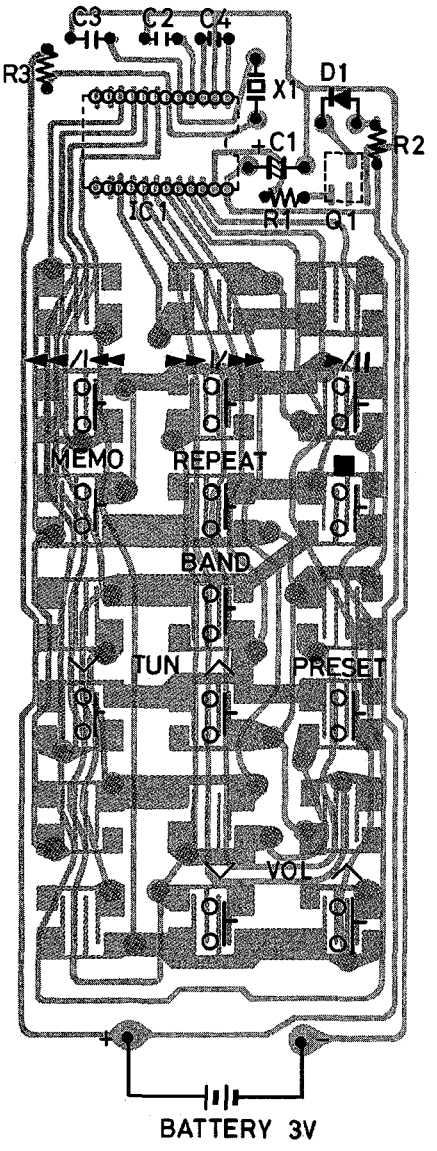
Observe by checking leakage-current or resistance measurement that the exposed parts are acceptably insulated from the supply circuit.

Observe **MOS** components handling instructions when servicing!

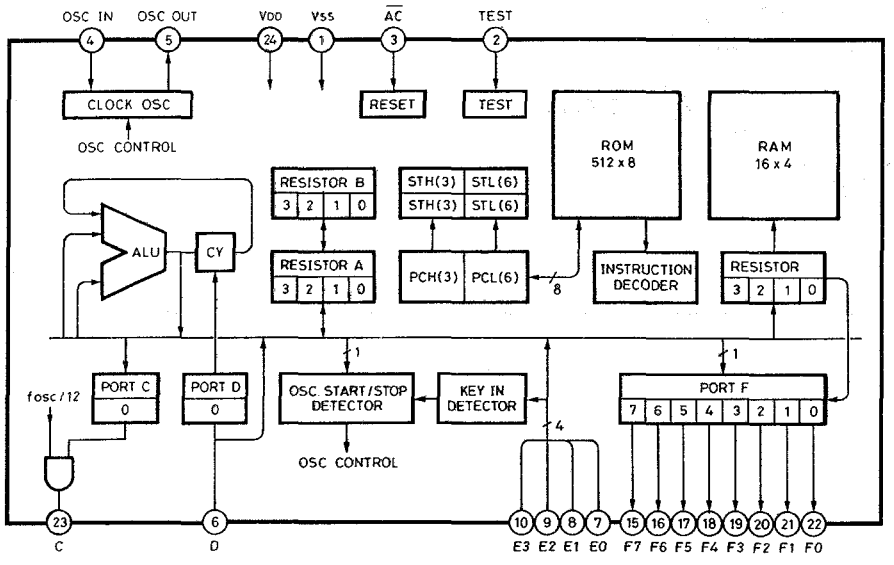
ALTERNATIONS RESERVED


1
4
5
6
10
7
8
2
9
199
200





IC1 - M50560-110FP

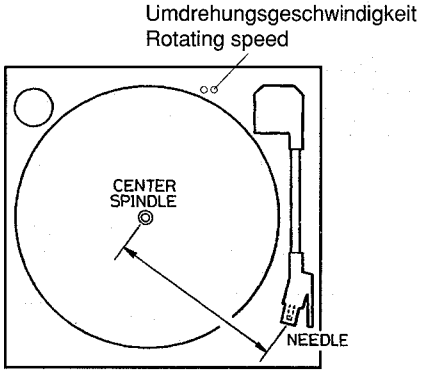


Einstellungen am Plattenspieler

Umdrehungsgeschwindigkeit
Geschwindigkeitsschalter auf 33 U/min. stellen. Sollgeschwindigkeit einstellen. Einstellbar durch das in der Zeichnung angegebene Loch.

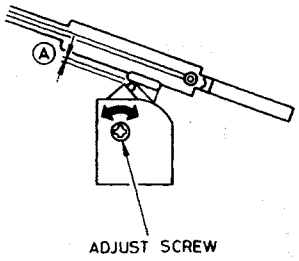
Adjustments at the turn table

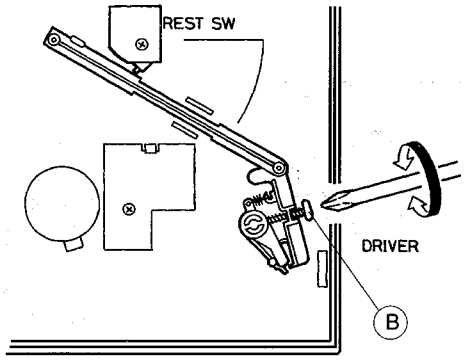
Rotating speed
Set the speed selector switch to 33 rpm. Set the speed to the specified value. Adjustable through the hole which is shown in the figure.



Justage des Ruheschalters (SW941)
- Tonarm auf den Tonarmauflage legen.
- Ruheschalterplatte so festschrauben, daß der Schalter SW941 0,1-0,3 mm Spiel hat (A) .
- Schraube (B) so einstellen, daß der Schalter 3 mm vor der Tonarmauflage schaltet.

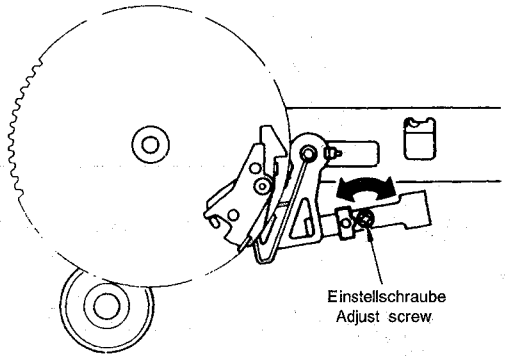
Adjustment of the rest switch (SW941)
- Move the tone arm to the right side above the tone arm rest.
- Screw on the rest switch board so that there is a free space of 0,1 to 0,3 mm at the switch SW 941 (A) .
- Adjust the screw (B) so that the switch switches 3 mm before the tone arm rest.

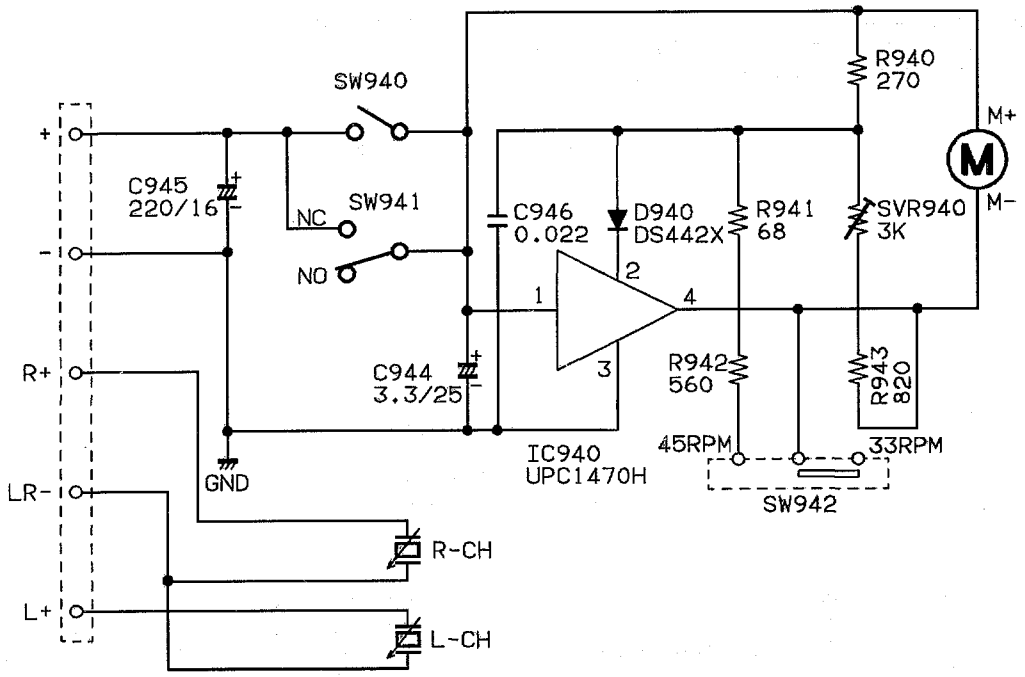


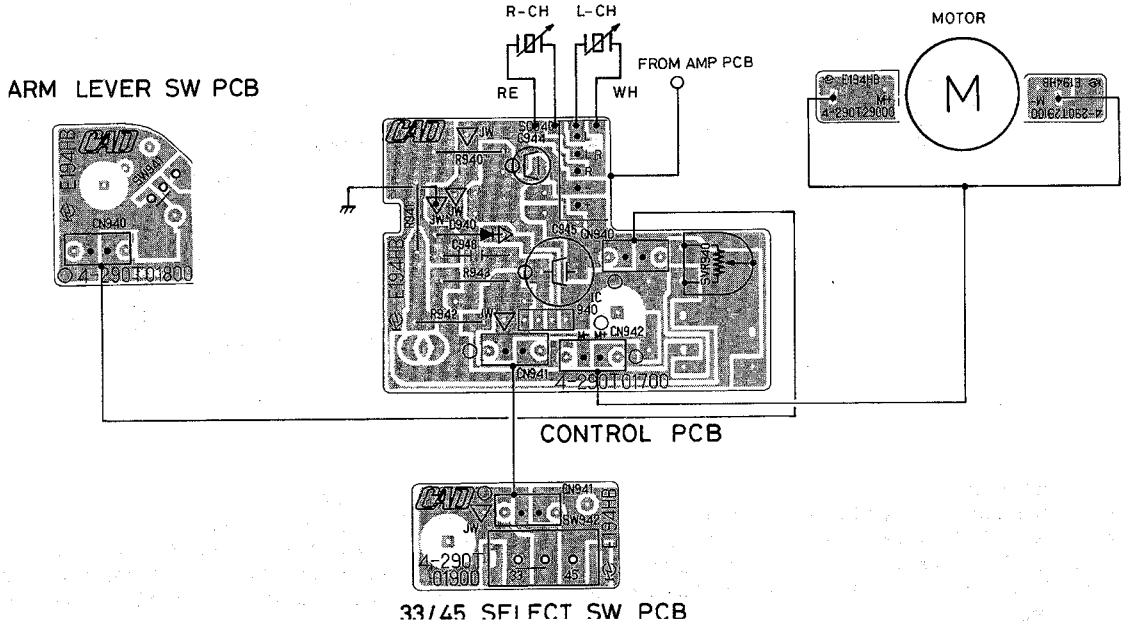


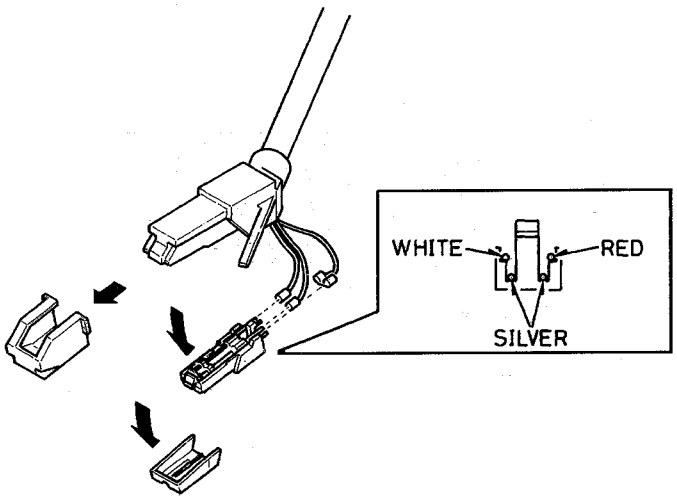
Automatische Tonarmrückführung
- Tonarm in Ruhestellung mit Tonarmklammer arretieren.
- Gerät anheben und mit einen Schraubendreher Einstellschraube justieren. Wenn der Tonarm zu früh zurückgeführt wird, drehen im Uhrzeigersinn. Wird der Tonarm nicht zurückgeführt, drehen gegen den Uhrzeigersinn.

Auto-Return position
- Set the tonearm to rest position.
- Raise the player and insert a screwdriver into the adjusting hole to turn the setscrew. If the tonearm returns before the tone ends turn clockwise. If there is no auto-return turn counterclockwise.




SW940
R940
270
M+
M
M-
C945
220/16
NC
SW941
NO
C946
0.022
D940
DS442X
R941
68
SVR940
3K
1
2
3
4
C944
3.3/25
R942
560
R943
820
45RPM
33RPM
SW942
IC940
UPC1470H
GND
+
-
R+
LR-
L+
R-CH
L-CH


ARM LEVER SW PCB
R-CH
L-CH
RE
WH
FROM AMP PCB
MOTOR
M
CONTROL PCB
33/45 SELECT SW PCB

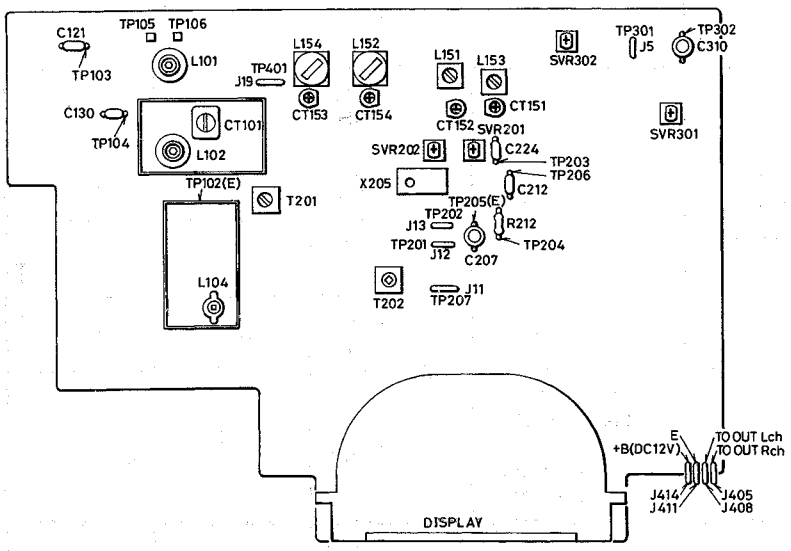

WHITE
RED
SILVER

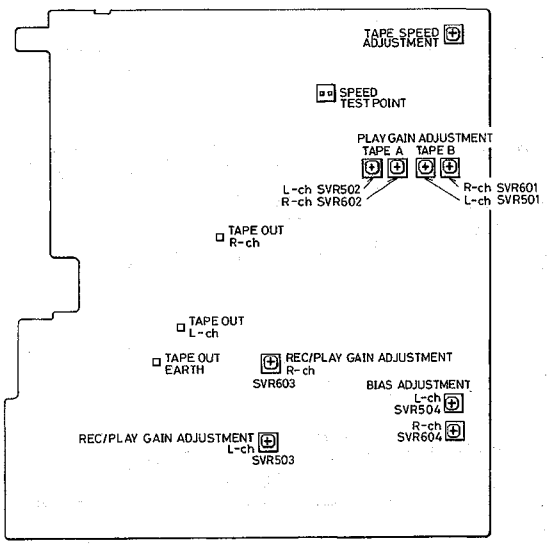
D GB F I E

Abgleich Alignment	Einspeisung Feeding	Meßpunkt Testpoint	Hinweise Instruction	Band	f	Abgleichpunkt Alignment point	Einstellung Adjustment
Oszillator Oscillator		TP 401 ← 000		LW	144 kHz	L 153	1.6±0.03V
					290 kHz	CT 154	6.5±0.05V
				MW	522 kHz	L 151	1.2±0.03V
					1611 kHz	CT 152	8.0±0.05V
ZF IF	Abgleich nach Rauschen Alignment by noise			MW	999	X205	max.
Vor-u. Zwischenkreis Aerial band pass cct.	U_e < f_{mod}= 1 kHz; m = 30 %	J 405 J 408		LW	162 kHz	L 154	max.
					279 kHz	CT 153	max.
				MW	603 kHz	L 152	max.
					1404 kHz	CT 151	max.
Suchlaufstopp Selfseek stop	U_e = 17,8 mV (85dBµV) f_{mod}= 1 kHz; m = 30 %		$U_{TP\ 207}$ bei Suchlaufstop <4V $U_{TP\ 207}$ <4V when the selfseek stops		999 kHz	SVR 202	Suchlaufstop Selfseek stop
Oszillator Oscillator		TP 401 ← 000		FM	87,5 MHz	—	—
					108 MHz	L 104	8.0±0.05V
ZF IF	Abgleich nach Rauschen Alignment by noise				98 MHz	T 201	max.
		TP 201 ← 000 TP 202 ←				T 202	0 ± 0,05V
Vor-u. Zwischenkreis Aerial band pass cct.	f_{mod}= 1 kHz / U_e <	TP 103 ←			90 MHz	L 101 L 102	max.
					106 MHz	CT 101	max.
Suchlauf Selfseek	f_{mod}= 1 kHz U_e = 12,6 µV (22 dBµV)		$U_{TP\ 207}$ bei Suchlaufstop <4V $U_{TP\ 207}$ <4V when the selfseek stops		98 MHz	SVR 201	Suchlauf-stop Selfseek stop
STEREO VCO	unmod.	TP 301 ← 000 F				SVR 302	19 kHz ± 50 Hz
STEREO Über-sprechen Crosstalk	G U_e = 2 mV (66 dBµV) Δf = ±40 kHz	R mod. / L mod. R 756 / R 856				SVR 301	Min.

D GB F I E

Abgleich Alignment	Einspeisung Feeding	Meßpunkt Testpoint	Hinweise Instruction	Band	f	Abgleichpunkt Alignment point	Einstellung Adjustment
19 kHz Sperre 19 kHz Wave trap	f_{mod}= 19 kHz	J 405 J 408			19 kHz	L301 L302	min





Zeichenerklärung/Legende/Légende/Simbologia/Aclaraciõn

	Meßsender/Testgenerator Générateur/Generatore di misura Generador frecuencias		Einstellung wiederholen/To repeat the adjustment Répéter le réglage/Ripetere la regolazione Repetir el adjuste
0000	Digitalvoltmeter/Digital voltage meter Voltmètre digital/Voltmetro digitale Voltimetro digital		Antenne/Aerial Cadre/Antenna Antena
	NF-Voltmeter/AF-Voltmeter Voltmètre BF/Voltmetro BF Voltimetro de BF		Rahmenantenne/Frame aerial Cadre/Antenna a telaio Antena de cuadro
	Aufnahme/Record Enregistrement/Registrazione Grabaciõn	0000 F	Frequenzzähler/Frequency counter Fréquencemètre/Frequenzimetro Contador frecuencias
	Wiedergabe/Playback Lecture/Riproduzione Reproducciõn	TEST 448	Sach - Nr. 35079 - 018.00 Order No. 35079 - 018.00 Références 35079 - 018.00 No. ordine 35079 - 018.00 No de codigo 35079 - 018.00
	Kopfhörer-Buchse/Headphone socket Embases ecouteur/Prese cuffia Conectores "auriculares"		Tonkopf/Audio head Tete son/Testina audio Cabeza de sonido
G	Stereogenerator/Stereo-Generator Générator de Stéréo/Generatore di Stereo Generador de Stereo	G	NF-Generator/AF-Generator Générateur BF/Generatore BF Generador de BF

D GB F I E

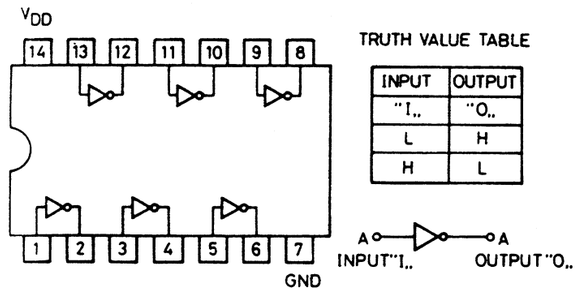
Messung Measurement	Einspeisung Input	f	Betriebsart Mode	Meßbedingung Testparameter	Anforderung Requirement	Einstellung Adjustment
Azimut **Azimuth**	Cass. **A** / Cass. **B** — 448 TEST	10 kHz			L=R Maximum Maximum	
Band-geschwindigkeits-einstellung **Tape speed adjustment**	Cass. **A** — 448 TEST	3150 Hz	Cass. **A**	1000 F	3150 Hz	SVR 001
Wiedergabe Pegel **Playback level**	Cass. **A** / Cass. **B** — 448 TEST	315 Hz	Cass. **A** / Cass. **B**	Tape out R-ch / Tape out L-ch	675 mV	SVR 502 SVR 602 SVR 501 SVR 601
Vormagnetisierung **Bias**	G → CD Eingang CD Input	1.) 1 kHz 2.) 10 kHz	Function "CD"		150 mV	G
	Cass. **B** — Normal CrO_2		Cass. **B** CrO_2 Dolby ein/on	Tape out R-ch / Tape out L-ch		SVR 504 SVR 604
			Function "Tape"		$U_{1kHz} = U_{10\,kHz}$	kontrollieren control
Aufnahme Pegel **Record Level**	G → CD Eingang CD Input	1 kHz	Function "CD"		56 mV	G
	Cass. **B** — Normal CrO_2		Cass. **B** CrO_2 Dolby aus/off	Tape out R-ch / Tape out L-ch		SVR 503 SVR 603
			Function "Tape"		56 mV	kontrollieren control
Löschfrequenz **Erase frequency**			Cass. **B** OSC 1	1000 F	83 kHz	L 931
Aufwickelmoment **Take-up Torque**	456 TEST		Wiedergabe Playback Vorlauf F.FWD Rücklauf REW		45-60 gr.cm 55-120 gr.cm 55-120 gr.cm	

456 TEST — Sachnummer: 35079 - 014.00
Order No.: 35079 - 014.00

448 TEST — Sachnummer: 35079 - 018.00
Order No.: 35079 - 018.00

IC-Innenschaltbilder

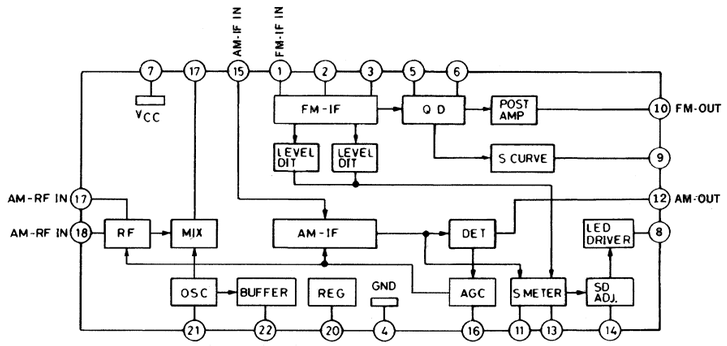
IC 001 - LC 4069 (Hes Inverter)



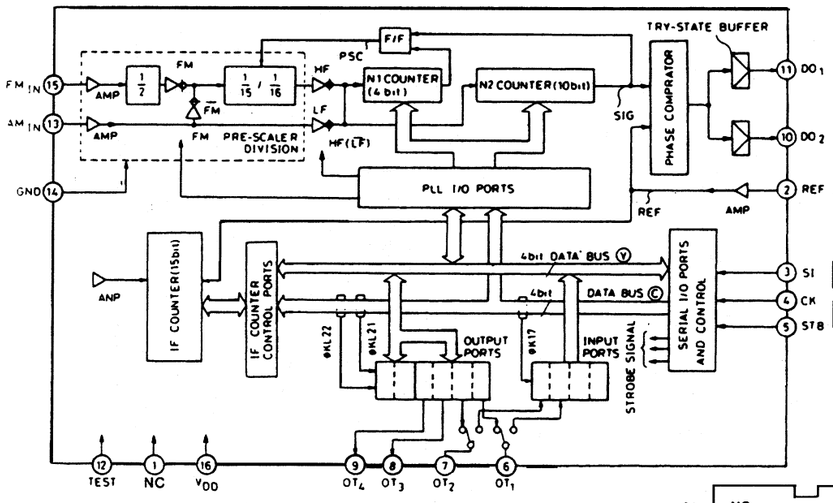
TRUTH VALUE TABLE

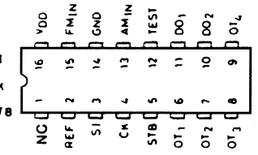
INPUT	OUTPUT
"I.."	"O.."
L	H
H	L

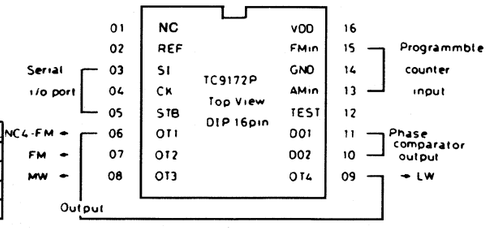
IC 201 - LA1265 (Tuner System)



IC 401 - TC9172AP (High-Speed PLL with Pre-Scaler)





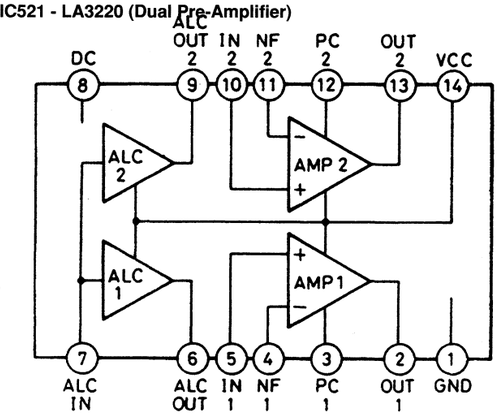


TC9172AP

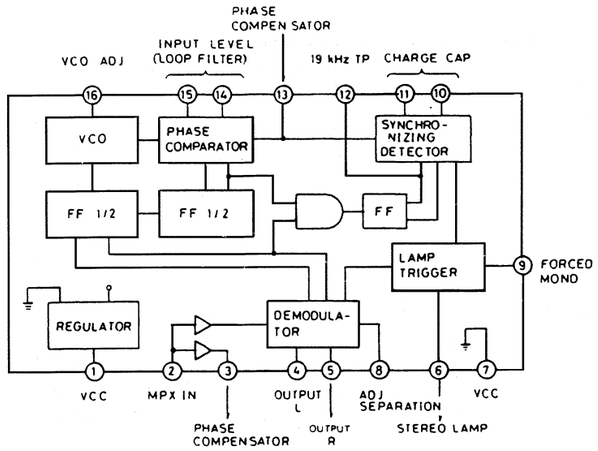
PORT	NO.	NAME	FUNCTION	ACTIVE	FIRST SETTING
OT 1	06	FM	FM BAND OUTPUT	H	H
OT 2	07	AM (MW, LW)	LW, MW OUTPUT	H	L
OT 3	08	MW	MW BAND OUTPUT	H	L
OT 4	09	LW	LW BAND OUTPUT	H	L

IC Block Diagram

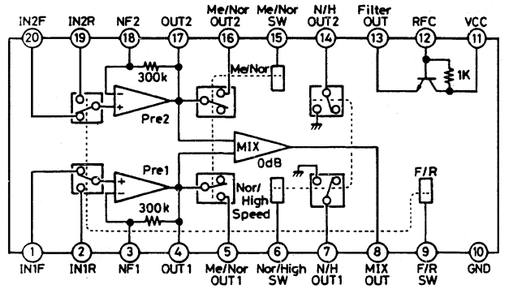
IC521 - LA3220 (Dual Pre-Amplifier)



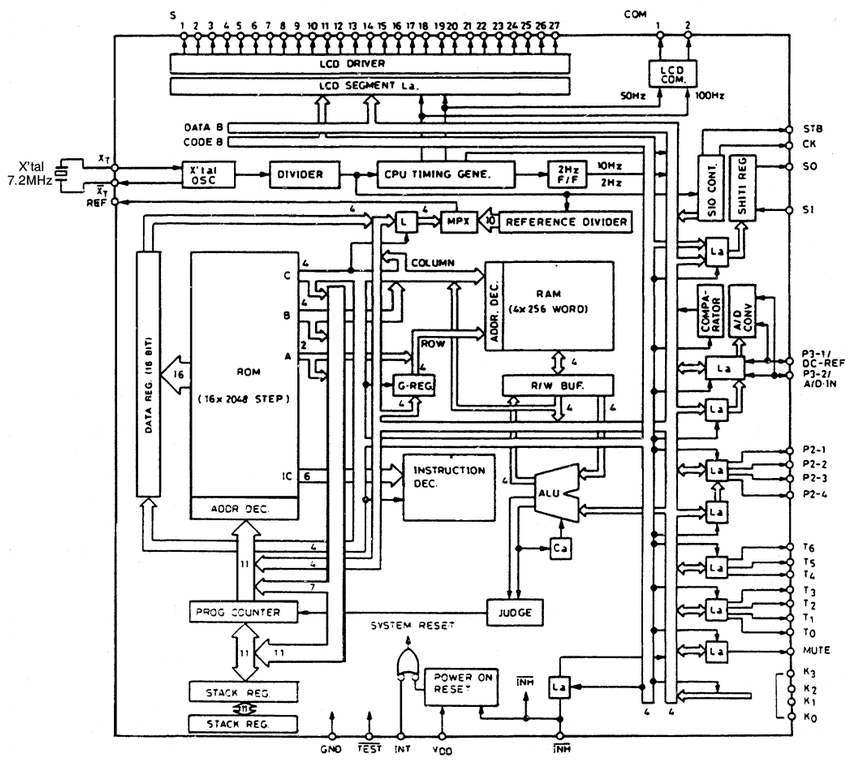
IC301 - LA3361 (PLL FM MPX, Stereo Demodulator)

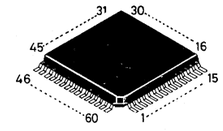


IC501 - LA3246 (Pre-Amp Mixing-Amp Electrical Switch)

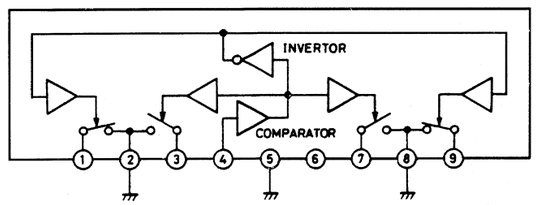


IC402 - TC9306F-045-BS

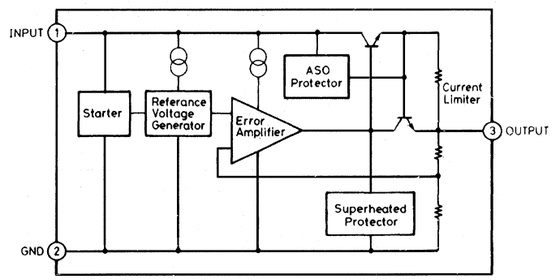




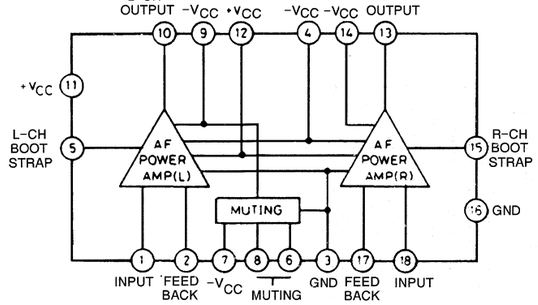
IC502 μPC1330HA
(Cassette Deck 2 Channel Haed Select Switch IC)



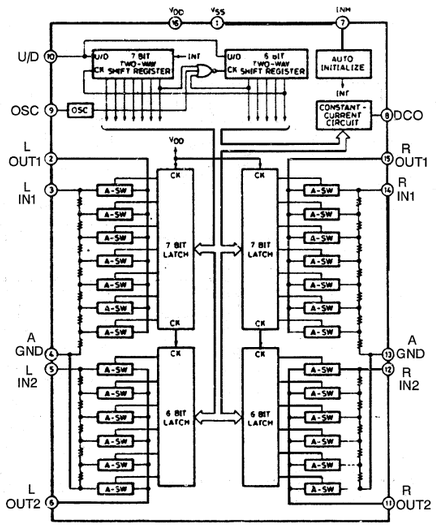
IC 951, IC 952 - LA7812ML
(12V 3-Terminal Constant Voltage Regulated Power Supply)



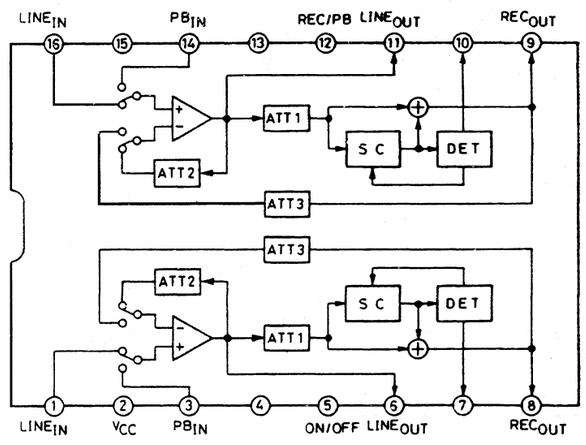
IC953 - STK 4112 II (2 Channel AF Power Amp)



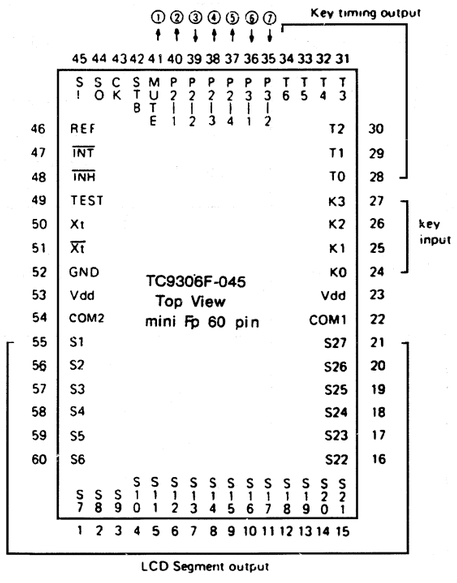
IC054 - TC9153 (Electronic Volume)



IC551 - CXA1101P (Dolby* B-Type Noise Reduction)



*DOLBY und das □□ -Symbol sind Warenzeichen der DOLBY Laboratories Licensing Corporation.
*DOLBY and the □□ -Symbol are trademarks of DOLBY Laboratories Licensing Corporation.



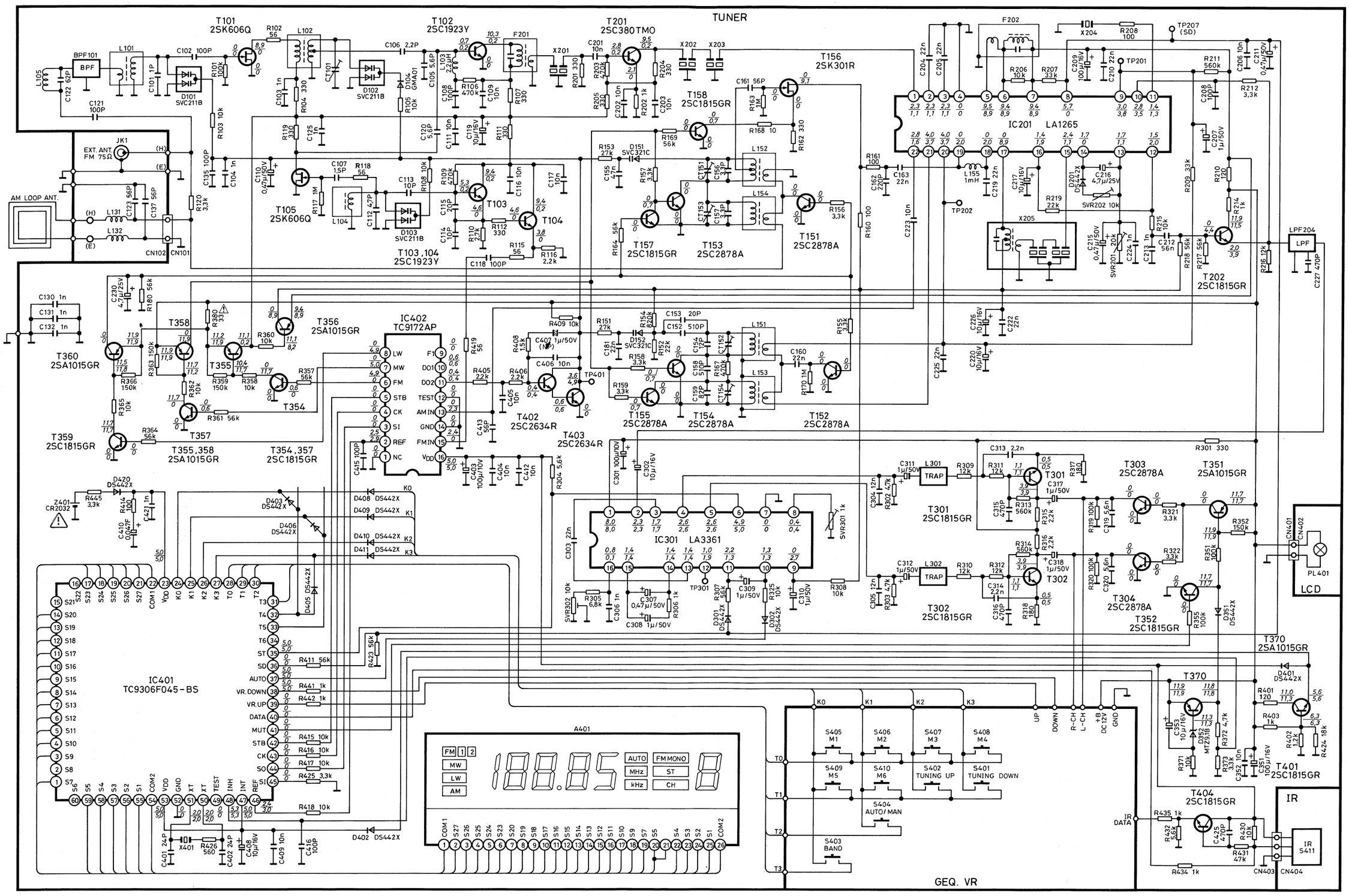
BAND

BAND	CODE A	CODE B	FREQUENCY (Hz)	STEP (Hz)	Fref (Hz)	IF (Hz)
FM	0	0	87.9 ~ 107.9 M	200K	25K	+10.7M
	1	0	87.50 ~ 108.00 M	50K		
	0	1	76.0 ~ 90.0 M	100K		-10.7M
	1	1	87.4 ~ 108.1 M	50K		+10.7M
MW	0	0	530 ~ 1700 K	10K	10K	+450K
	1	0	531 ~ 1602 K	9K	9K	
	0	1	522 ~ 1611 K			+459K
	1	1	522 ~ 1629 K			+450K
LW	1		144 ~ 290 K	AUTO MANU 9K/1K	1K	+459K
SW1	1	–	13.2 ~ 7.3 M	5K	5K	+450K
SW2	–	1	29.5 ~ 21.75 M			

TC9306F-045

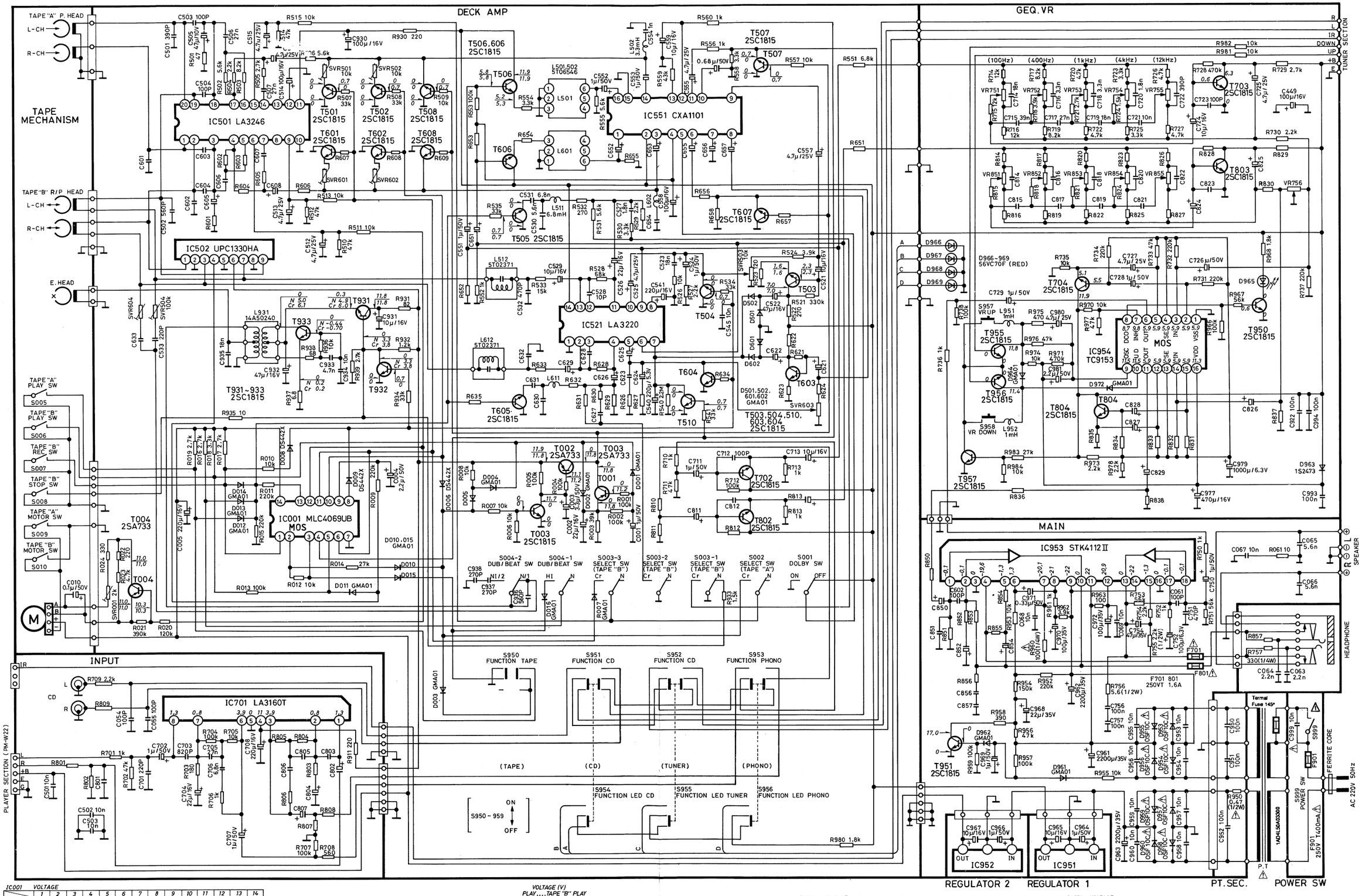
PORT	No.	NAME	FUNCTION	ACTIVE	FIRST SETTING
MUTE	41	MUTE	MUTE OUTPUT	H	H
P2-1	40	REM-DATA	REMOTE INPUT	H	–
P2-2	39	VR UP	VR UP OUTPUT	H	L
P2-3	38	VR DOWN	VR DOWN OUTPUT	H	L
P2-4	37	AUTO/MANUAL	AUTO OUTPUT	H	L
P3-1	36	TUNED/SD	TUNED & SD INPUT	L	–
P3-2	35	STEREO	STEREO INPUT	L	–

Schaltbild
Wiring Diagram



GRUNDIG

CC 660



IC001	VOLTAGE													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
PLAY	11,3	0	0	11,8	0	11,6	0	11,7	0	0	11,6	0	10,5	11,9
REC	0	11,8	0,62	11,8	11,0	0	0	0	11,3	11,7	0	0	10,2	11,9
HI DUB	0	11,5	0,64	11,8	11,0	0	0	0	11,3	11,7	0	11,7	0,4	11,9
NOR DUB	0	11,5	0,62	11,8	11,0	0	0	0	11,3	11,7	0	11,7	9,5	11,9
OTHER			11,7											

(FUNCTION SW NON TAPE REC)

VOLTAGE (V)
PLAY....TAPE "B" PLAY
REC....TAPE "B" REC

IC501	VOLTAGE																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	0	0	0,59	4,4	4,4	0	0	4,4	5,9	0	9,7	9,7	4,4	0	0	4,4	4,4	0,59	0	0
REC	0	0	0,59	4,4	4,4	0	0	4,4	0	0	9,7	9,7	4,4	0	0	4,4	4,4	0,59	0	0
OTHER					5,9				0						5,9					

(HI DUB) (TAPE "A" PLAY) (CrO2)

IC502	VOLTAGE								
	1	2	3	4	5	6	7	8	9
PLAY	0	0	0	0	0	11,9	0	0	0
REC	0	0	0	11,6	0	11,9	0	0	0

IC521	VOLTAGE													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
PLAY	0	5,9	11,2	5,9	5,9	0	0	5,9	0	5,9	5,9	11,2	5,9	11,9
REC	0	5,9	11,2	5,9	5,9	0	0	5,9	0	5,9	5,9	11,2	5,9	11,9
OTHER							1,25							

(ALC DOING)

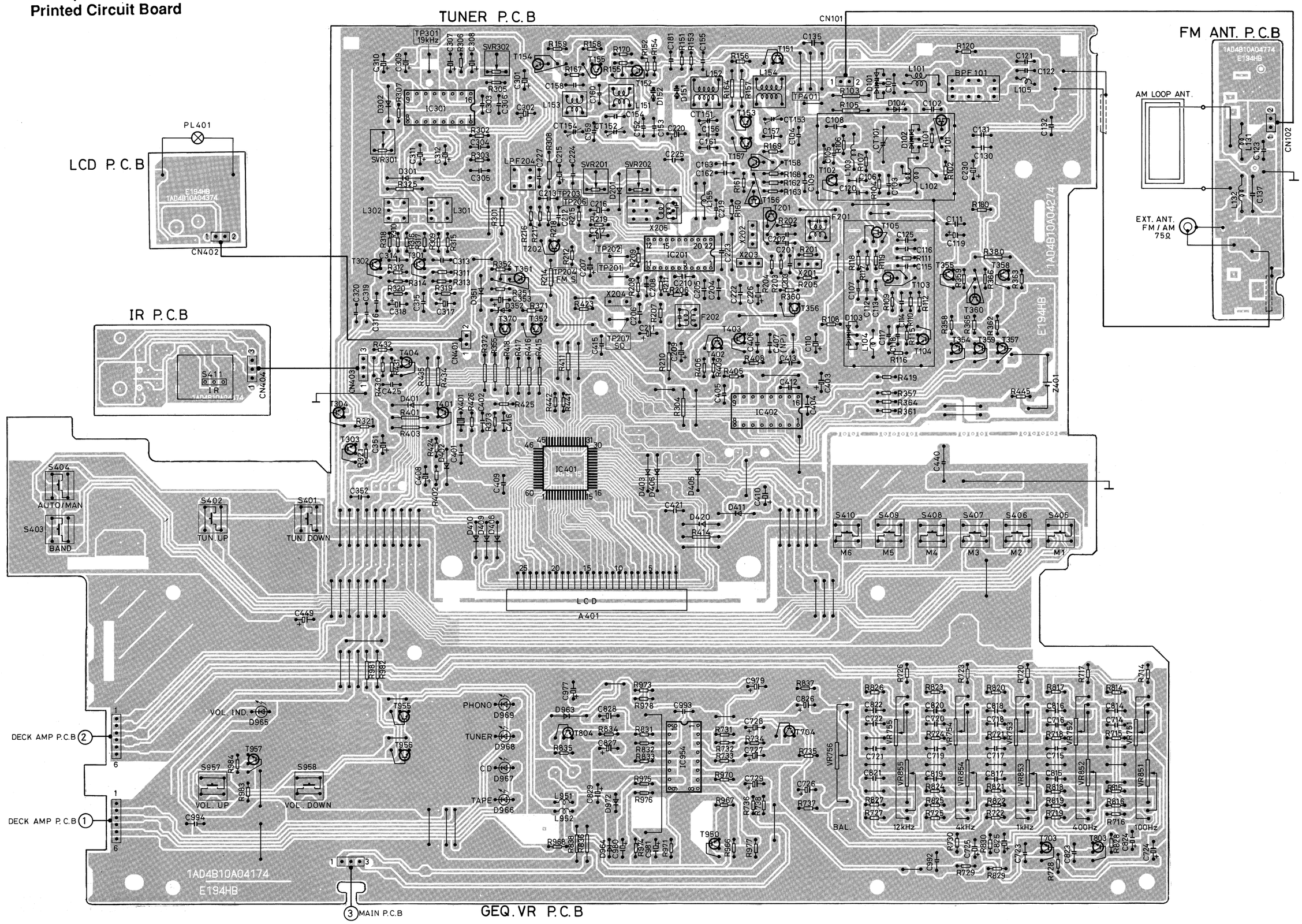
IC551	VOLTAGE															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PLAY	6,0	11,9	6,0	6,0	11,9	6,1	0,4	6,1	6,1	0,4	6,1	11,8	1,2	6,0	0	6,0
REC	6,0	11,9	6,0	6,0	11,9	6,1	0,4	6,1	6,1	0,4	6,1	11,8	1,2	6,0	0	6,0
OTHER					0											

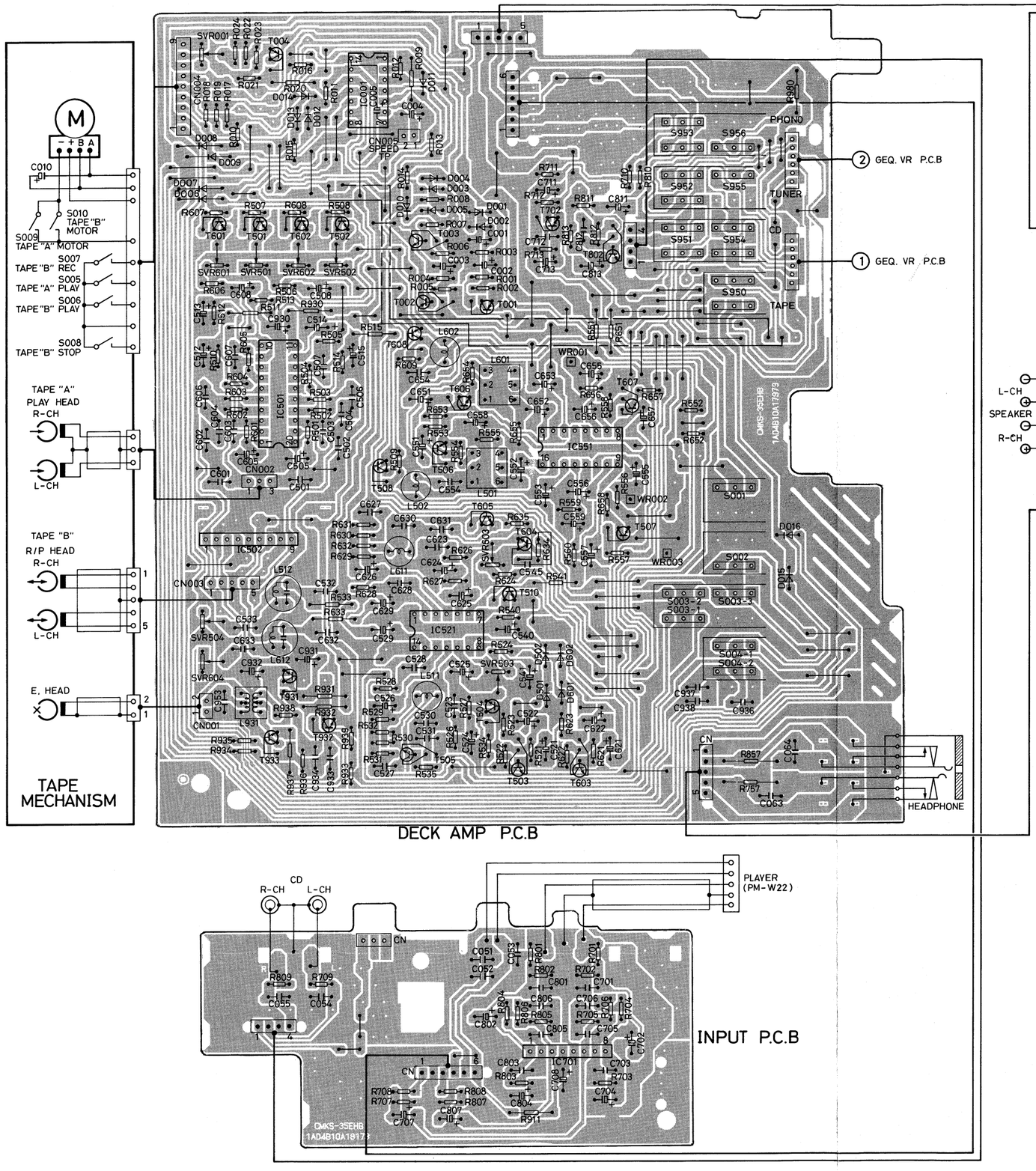
(DOLBY ON) (FUNCTION SW NON TAPE REC)

GRUNDIG

CC 660

Druckplatten
Printed Circuit Board




TAPE MECHANISM
M
- + B A
C010
S010 TAPE "B" MOTOR
S009 TAPE "A" MOTOR
S007 TAPE "B" REC
S005 TAPE "A" PLAY
S006 TAPE "B" PLAY
S008 TAPE "B" STOP
TAPE "A" PLAY HEAD R-CH
L-CH
TAPE "B" R/P HEAD R-CH
L-CH
E. HEAD
CN003
CN001
SVR001
T004
CN004
CN005 SPEED
D007
D008
R507
R608
R508
T601
T501
T602
T502
SVR601
SVR501
SVR602
SVR502
R606
C606
C508
R513
R511
C930
C514
R505
R515
C515
C512
R512
C513
R606
C604
R604
R603
C602
C603
C605
C601
CN002
IC501
R503
R502
R501
C502
C504
C505
C501
R509
T508
C554
L502
C627
C630
C631
C623
R626
C624
R627
C628
C625
L611
R633
R628
C629
C633
C632
L612
C532
C533
SVR504
SVR604
C931
C932
C933
R931
T931
R938
R932
T932
L931
R935
R934
T933
R936
C934
C935
R933
R939
C936
C937
R937
R938
C938
C939
R939
R940
C940
R941
C941
R942
C942
R943
C943
R944
C944
R945
C945
R946
C946
R947
C947
R948
C948
R949
C949
R950
C950
R951
C951
R952
C952
R953
C953
R954
C954
R955
C955
R956
C956
R957
C957
R958
C958
R959
C959